THE FACET SATISFACTION SCALE : ENHANCING THE MEASUREMENT OF JOB SATISFACTION

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Thesis Prepared for the Degree of

MASTER OF SCIENCE

UNIVERSITY OF NORTH TEXAS

August 2007

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Yeoh, Terence Eng Siong, The Facet Satisfaction Scale: Enhancing the measurement of job satisfaction. Master of Science (Industrial and Organizational Psychology), August 2007, 74 pp., 32 tables, 7 illustrations, references, 106 titles.

Job satisfaction is an important job-related attitude that has been linked to various outcomes for both the organization and its employees. In spite of this, researchers of the construct disagree about how job satisfaction is defined and measured. This study proposes the use of the Facet Satisfaction Scale, a new scale of measurement for job satisfaction that is based on more recent definitions of the construct. Reliability and preliminary predictive validity studies were conducted in order to determine the utility of this scale. Next steps in scale development are discussed.

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CHAPTER 1

INTRODUCTION

The Facet Satisfaction Scale – Enhancing the Measurement of Job Satisfaction

The Hawthorne studies (Roethlisberger & Dickson, 1939) at AT&T's Western Electric Division provided early scientific indicators of the importance of the human factor and its impact on organizationally relevant outcomes such as job performance. In the seven decades since then, researchers have continued to study the impact of the individual in the workplace, placing special attention on how various outcome measures are related to an individual's level of job satisfaction (Brief & Weiss, 2002). By the mid-1970s, Locke (1976) provided further evidence of the popularity of the job satisfaction when he estimated that over 7,000 studies had been published examining this construct. More recently, Spector (1997) noted that the popularity of the construct had not diminished, but instead continued to grow as over 12,400 studies analyzing job satisfaction had been published before the turn of the century. Indeed, job satisfaction is not only "the most studied variable in I/O psychology" (Spector, 2000, p. 196), but it is also the most focal employee attitude from the perspective of research and practice (Saari & Judge, 2004).

The continued popularity of this construct is very likely linked to its relationship with many important outcomes. Studies conducted over the years have clearly shown a relationship between job satisfaction and organizationally-relevant outcomes such as on-the-job performance (Judge, Thoresen, Bono, & Patton, 2001; Iaffaldano & Muchinsky, 1985; Herzberg, Mausner, Peterson, & Capwell, 1957), organizational citizenship behavior (Wagner & Rush, 2000; Bateman & Organ, 1983), absenteeism (Lambert, Edwards, Camp, & Saylor, 2005; Steers & Rhodes, 1978), counter-productive work behaviors (Penney & Spector, 2005), and both intention-to-quit (Campbell & Campbell, 2003) and actual turnover (Griffeth, Hom, Gaertner,

2000; Lee, Mitchell, Holtom, McDaniel, & Hill, 1999). Other studies have also found significant relationships between job satisfaction and an employee's psychological processes, such as the level of organizational commitment (Sagie, 1998; Meyer, Allen, & Smith, 1993), motivation (Hackman & Oldham, 1976), and job involvement (Freund, 2005). Finally, job satisfaction has also been shown to be significantly related to an employee's life outside of the work place, as determined by measures of life satisfaction (McElwain, Korabik, & Rosin, 2005), work-to-family and family-to-work conflict (Mesmer-Magnus & Viswesvaran, 2005), and the manifestation of both physical and behavioral symptoms of stress (Siu, Spector, Cooper, & Lu, 2005). In addition, there are also indications that the relationship between job satisfaction and these variables do not vary due to demographic factors such as age, gender, or race, once all other variables (i.e. pay, education, tenure, etc.) are controlled for (Dipboye, Smith, & Howell, 1994; Witt & Nye, 1992).

While the research conducted thus far has revealed how important and popular job satisfaction is as a research construct, there are nevertheless limitations that undermine its effectiveness as a predictor of the various outcomes. As a result, the relationships that have been found between job satisfaction and these outcomes are typically low. For example, a meta-analysis of the relationship between job satisfaction and turnover found that the two constructs correlated at -.19 (Griffeth, et al., 2000). A meta-analysis by Mesmer-Magnus and Viswesvaran (2005) also found weak relationships between job satisfaction and both work-to-family and family-to-work conflict (r reported at -.14 and -.18 respectively). Finally, a meta-analysis of the job satisfaction – performance relationship found similarly low correlations, with the overall r = .17 (Iaffaldano & Muchinsky, 1985). While a more recent review (Judge, et al., 2001) found somewhat higher correlations (r = .30) between job satisfaction and performance, the relationship

was still described as only qualifying "as a moderate effect size" (p. 388). The generally low correlations found between job satisfaction and these outcome variables raises questions about the validity of the construct as well as its efficacy as a predictor in studies in the organizational sciences (Huff, Tekell, & Yeoh, 2005).

As a result, several authors have proposed causes for these weak relationships, including poor or inconsistent operational definition of the job satisfaction construct (Brief & Weiss, 2002) and faulty measurement systems (Brief & Roberson, 1989). In a recent review, Brief and Weiss (2002) noted that research performed in the 1990s has raised questions about the definitions, and measures of job satisfaction. This study will therefore analyze both of these issues in an attempt to create an enhanced measure of the job satisfaction construct in order to improve our understanding of the various job satisfaction – outcome variable relationships.

Defining Job Satisfaction

Early definitions of job satisfaction tended to focus on an employee's emotions and feelings towards the job. Examples of this include the now classic definition in which job satisfaction is defined as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (Locke, 1976, p. 1300), and Smith, Kendall and Hulin's "persistent feelings toward discriminable aspects of the job situation" (1969, p. 37). This affect-based definition of job satisfaction remains popular and continues to be used by researchers, some of whom define job satisfaction as "an affective reaction to a job that results from the incumbent's comparison of actual outcomes with those that are desired" (Cranny, Smith, & Stone, 1992, p. 1). A recent meta-analysis by Connolly and Viswesvaran (2000) also provided support for the use of affect in definitions of job satisfaction when they found that job satisfaction was correlated with both positive and negative affectivity. While popular, defining job satisfaction as affect raises

difficulties when measuring the construct, namely that "affective reactions are likely to be fleeting and episodic" (Hulin & Judge, 2003, p. 256).

Thus defined as an unstable construct, job satisfaction would be difficult, if not impossible to accurately measure or use in predictive studies. Fortunately, pioneering research in the 1980s into the role and impact of affect on job satisfaction served as a counter to the view that job satisfaction was an unstable state variable. This began with the work of Watson and Tellegen (1985), whose research on self-reported mood first let to the proposed separation of affect into two subcomponents – positive and negative. The in a classic study, Staw and Ross (1985) defined job satisfaction as the positive or negative affective disposition of an individual towards his or her job (i.e. job satisfaction is predominantly based on personality). Consistent with their hypotheses, these authors found significant stability of job satisfaction measures over 3- and 5-year time periods despite changes in the individual's occupation or employer (Staw & Ross, 1985). A more recent study by Steel and Rentsch (1997), further provided support for the stability of job satisfaction, this time over a 10-year period. The results were interpreted to mean that dispositional affect is indeed a significant predictor or precursor to job satisfaction. When coupled with findings that genetics have at least some impact on job satisfaction (Arvey, Bouchard, Segal, & Abraham, 1989), these results indicate that job satisfaction is a stable, trait-like construct instead of an unstable state variable, thus usable in studies attempting to predict various organizationally-relevant outcomes. While there have been detractors to the dispositional affect approach to job satisfaction (see Gerhart, 1987; 2005, for reviews), a recent review (Staw & Cohen-Charash, 2005) found that this conceptualization is still popular today.

Instead of taking a dispositional or personality-based (i.e. affect-focused) approach, other researchers have focused their measures of job satisfaction "on judgment-based, cognitive

evaluations of jobs on characteristics or features of jobs and generally ignored affective antecedents of evaluations of jobs and episodic events that happen on jobs" (Hulin & Judge, 2003, p. 255). This line of thinking is not a new one, and authors have been insisting that job satisfaction is primarily based on an individual's cognitions rather than affect at least since the 1980s (see for example, Organ & Near, 1985).

Rather than ignoring either the affective or cognitive aspect of job satisfaction, however, Brief (1998, p. 86) described job satisfaction as "an internal state that is expressed by affectively and/or cognitively evaluating an experienced job with some degree of favor or disfavor." This definition can be seen as an attempt at reconciling both the affective and cognitive dimension of job satisfaction. This reconciliation of the affective-cognitive dimensions brings about a third conceptualization of the construct – that of job satisfaction as an attitude.

Attitudes were defined early on as "a behavior pattern, anticipatory set or tendency, predisposition to specific adjustment to designated … situations, or more simply a conditioned response to … stimuli" (LaPiere, 1934, p. 230). Over time however, attitude theorists began to provide a tripartite definition of attitudes, with affective, cognitive, and behavioral elements (see Franzoi, 2003 for a review). More recently, though, studies have shown that the behavioral response may not always abide by the purported attitude, in terms of affect and cognition (see for a review, Organ & Hamner, 1982). In response, a "second school of thought, concerning the multidimensional structure of attitudes, advocates a two-component model – affective and cognitive" (Brief & Roberson, 1989, p. 718). In accordance with this conceptualization of attitudes, job satisfaction is thus said to contain at least an affective and cognitive component (see for examples Fisher, 2000; Crites, Fabrigar, & Petty, 1994; Millar & Tesser, 1986). As a result, the behavioral component has been relegated to an outcome measure of the attitude itself

(see Franzoi, 2003). Applying this line of thinking to the construct of job satisfaction seems to be consistent with the belief among researchers that an individual's job satisfaction level impacts relevant organizational- and employee-related behavioral outcomes (see for examples, Siu, et al., 2005; Judge, et al., 2001).

Thus, in these terms, job satisfaction can be operationalized as a relatively enduring attitude shaped largely by social and interpersonal processes in the work environment (Dipboye, et al., 1994). While not a new conceptualization (see for example the complex linkages proposed by Hamner & Organ, 1978), defining job satisfaction as an attitude is advantageous as it allows for the application of social psychological attitude methodology to analyze the construct (Brief, 1998; Organ & Near, 1985). Even more recently, researchers have further refined the attitudinal definition of job satisfaction in order to include an evaluative element. Examples of this include Motowidlo's (1996, p. 176) definition of job satisfaction as "judgments about the favorability of the work environment" and Weiss's (2002, p. 6) "positive or negative evaluative judgment one makes about one's job or job situation." A recent review of the major theoretical models of job attitudes by Hulin and Judge (2003) also found a common theme across all models – a comparator (i.e. an evaluative) component, which is used by the employee to express their level of job satisfaction. Finally, a study by Huff and his colleagues (Huff, et al., 2005) also found that including a measure of evaluation allowed for a better fitting model of job satisfaction beyond simply affect, cognition, or affect and cognition. In addition to creating a better model of job satisfaction, specifically defining the construct as an evaluation of the job instead of simply as an attitude (with purely affective and cognitive components) is critical in that these two definitions may bring about separate antecedents and indicators of the construct (see for a review, Brief & Weiss, 2002; Crites, et al., 1994).

However, the addition of an evaluative component to job satisfaction (as opposed to maintaining a strictly dispositional or affective-cognitive approach) again allows the potential for instability of the construct. Picking up on this, mood researchers (see, for examples, Fisher, 2002; Weiss, Nicholas, & Daus, 1999) have found that job satisfaction is not entirely stable, but fluctuates over timeframes even as short as hours within a day. While the construct is not entirely predicated upon the situation as is proposed by the Social Information Processing model (Salancik & Pfeffer, 1978), these findings do indicate that individuals take into account both shorter-term situational cues as well as longer-term attitudes when asked to provide an account of their job satisfaction.

Based on this review of the literature, an adequate operational definition of job satisfaction must therefore take into account multiple factors, including the individual's evaluation of their job and any salient situational and/or mood effects, which at first glance would indicate that it is an unstable construct that is difficult if not impossible to measure accurately. However, given that job attitudes are more salient and accessible to the individual (Hulin & Judge, 2003) and that high accessibility leads to more consistent evaluations (via automatic activation of the attitudinal evaluation) (Fazio, Powell, & Williams, 1989), it should be possible to overcome the fluctuations caused by the situation and/or mood effects in order to more accurately measure job satisfaction. Therefore, while "the overwhelming majority of studies of job satisfaction adopt some form of affective definition" (Kuieck, 1980, p. 16), more recent research supports defining the construct as an individual's evaluation of the job and job situation (Weiss, 2002). Further evidence of this was presented in a recent review by Ajzen (2001, p. 28), who noted that "there is general agreement that attitude represents a summary evaluation of a psychological object."

Measuring Job Satisfaction

The difficulty in agreeing to a definition of job satisfaction is but one of the limitations facing researchers of the construct. Creating adequate measures to assess job satisfaction is the second major hurdle that must be overcome in order to increase our ability to refine the job satisfaction – outcome variable relationship. After all, a construct must be accurately defined before it can be properly analyzed, since "measurement and theory should go hand in hand" (Smith, et al., 1969, p. 1). With job satisfaction thus defined in evaluative terms, it becomes possible to create a measure that assesses the construct in a manner corresponding to its definition. However, several issues need to be addressed before creating a new measure of job satisfaction, including the use of: (1) global versus facet measures, (2) single-item measures of job satisfaction facets, and (3) semantic differential as basis for item creation.

Global versus facet satisfaction

The decision to create either a global- or a facet-based measure of job satisfaction is an important decision faced by researchers interested in job satisfaction scale creation. Fortunately, prior research has provided us with several caveats and options to help in making this decision. In a review of job satisfaction measures in the public domain, for example, Fields (2002) discussed the three major approaches that have been taken by authors of measurement scales – (1) global measures, (2) facet measures, and (3) a combination in some fashion of the previous two.

When job satisfaction measures contain items that directly ask an individual about his or her overall feelings about a job, the measure is said to be a global measure of the construct (see Ironson, Smith, Brannick, Gibson, & Paul, 1989 for a review). Examples of these scales would include the single-item Faces Scale (Kunin, 1955) or the three-item Overall Job Satisfaction

Scale (OJS: Cammann, Fichman, Jenkins, & Klesh, 1983), where employees are essentially asked to sum up their affective reactions or evaluations about their job and respond on the measure of the construct in general terms. Authors advocating the use of global measures of job satisfaction sustain that such measures successfully reflect individual differences in the construct rather than simply focusing on responses to specific items (see for a review, Fields, 2002). In addition, global measures have also been found to include areas of job satisfaction not measured by many facet measures, thus accounting for a greater proportion of the overall construct (Scarpello & Campbell, 1983).

Proponents of facet measures of job satisfaction however, have criticized the use of global measures on several bases, with a key issue being the complexity of the construct itself. Even since the early days of psychology, attitudes have been described to be complex constructs that cannot be described fully using any single numerical index (Thurstone, 1928). More recent reviews continue to stress that job satisfaction is a multifaceted construct, with various features or facets contributing to the construct as a whole (see for reviews, Howard & Frink, 1996; Kuieck, 1980; Porter & Steers, 1973). Furthermore, changes in one particular facet do not necessarily lead to changes in an individual's level of satisfaction in other facets (Smith, et al., 1969). This is especially the case if each facet is designed "to be relatively homogenous and discriminably different from the others" (Ironson et al., 1989, p. 193) in order to cover the principal areas of the general construct. In this case, each facet can be used as a diagnostic tool to gauge the areas in which an employee's satisfaction is satisfactory or needing improvement (Russell, Spitzmuller, Lin, Stanton, Smith, & Ironson, 2004). Finally, specific facet measures have also been noted to "better reflect changes in relevant situational factors because of the more precise referent" (Gerhart, 1987, p. 371).

However, when using facet measures, a difficulty arises in that there is little agreement as far as what constitutes a significant facet. Take for example, the Job Descriptive Index (JDI: Smith, et al., 1969), which has been touted as the most widely used measure of job satisfaction in use today (Cranny, et al., 1992). With a total of 72 items, the JDI focuses on five facets – work on the present job, present pay, opportunities for promotion, supervision on present job, and people on your present job. Nearly twenty years later, Hatfield, Robinson, and Huseman (1985) created the Job Perception Scale (JPS) measuring essentially the same five facets. While popular, a study by Buckley, Carraher, and Cote (1992) found that the five facets of the JDI contained only 42.7% trait variance, with the remainder being method and random error variance. Even the authors of the JDI itself admit that the five facets "do not specify completely the general construct of job satisfaction" (Smith, et al., 1969, p. 30). Thus it seems that while these five facets do contribute significantly to measures of job satisfaction, they are not the only facets of critical importance, and other researchers have added various facets to the list, including benefits, rewards, operating procedures, and communication (Job Satisfaction Survey, JSS: Spector, 1985), as well as company identification, physical work conditions, and career future (Index of Organizational Reactions, IOR: Dunham & Smith, 1979). The list goes on, and some scales have even been created to measure up to twenty facets (see for example, the Minnesota Satisfaction Questionnaire by Weiss, Dawis, England, & Lofquist, 1967).

As another point of caution, some authors (see for example, Rice, Gentile, & McFarlin, 1991) have also noted that the importance an individual places upon each facet of his or her job satisfaction has a significant moderating impact on measures of the construct. Specifically, these authors propose that an individual's overall job satisfaction is composed of a summation of the description of each facet[1] multiplied by the importance of that particular facet to the individual

(Rice et al., 1991). If indeed this were the case, facet measures of job satisfaction would have to include both descriptions of each facet and a measure or weight of how important the facet was to the individual. These scores would then be multiplied and summated in order to obtain an overall score of job satisfaction, thus further increasing the complexity of the measure. Fortunately, other researchers have found that there is no increase in predictive ability when using weighted versus unweighted job satisfaction measures (Jackson & Corr, 2002). These authors believe that individuals do not process their levels of job satisfaction by multiplying each facet description by its corresponding facet importance, but instead evaluate each facet in terms of an overall have-want discrepancy (Jackson & Corr, 2002), thus simplifying measures of facet satisfaction.

Finally, there are also researchers who call for the combination of both methods in order to obtain an overall measure of job satisfaction based on combining the scores on the various facets (Wright & Bonnett, 1992; Hackman & Oldham, 1974). A combination of the two methods has been said to allow for measurement of job satisfaction in both context-specific and context-free environments (Witt & Nye, 1992). In other words, the facet measures would allow for more accurate measures of each sub-dimension of the construct while an overall measure allows for comparison between individuals. Advocates for this combination approach have suggested two major approaches to creating an overall job satisfaction score from facet measures – the factor and composite models (Law & Wong, 1999). Essentially, the factor model proposes that an underlying multidimensional construct can be measured as the overlap between its various factors, while the composite model proposes that the underlying construct is the sum total of its facets (see Law & Wong, 1999 for an overview of the models). Most job satisfaction researchers however, tend to opt for the simpler composite model which applies either a linear summation or

averaging technique in order to combine the items and/or facets into an overall index or job satisfaction score (see for examples Bruck, Allen, & Spector, 2002; Jackson, Potter, & Dale, 1998; Lawler, 1983; Scarpello & Campbell, 1983; Locke, 1969), both of which produce an overall score that is significantly related to global job satisfaction and related measures.

Single-item facet measures

The second issue that should be addressed during scale creation is the number of items to be used in the scale. A common theme in data analysis has been the reduction of a large number of variables into fewer and more accurate items in order to provide a more parsimonious and meaningful summary of the data while continuing to account for the intercorrelations that may exist (Leung & Sachs, 2005). In recent years, job satisfaction researchers have also become interested in the possibility of creating shorter scales that continue to adequately measure the construct (see for example Russell et al., 2004). One method that is currently being examined by researchers is the use of single-item measures to assess each facet of job satisfaction (see for examples, Wanous & Hudy, 2001). The appeal of using this approach to create a measure of job satisfaction is quite significant, since it requires less space, increases cost effectiveness, increases face validity by reducing perceived redundancy of questions, and increases the ability to measures changes in the construct (see Nagy, 2002 for a review). In addition, single-item measures have been used successfully in measuring other constructs, including depressive mood states (Killgore, 1999) and religious values (Gorsuch & McFarland, 1972), as well as general job satisfaction (Kunin, 1955).

Detractors of this method have been vocal however, noting that "practitioners and researchers are warned to be wary of single-item measures" (Loo & Kells, 1998, p. 75). These authors' argument stem primarily from three notions – (1) that the internal reliability of single-

item measures cannot be estimated, (2) that single-item reliabilities would be unacceptably low even if they could be measured, and (3) that single-item measures are insufficient when measuring complex psychological constructs (see for reviews, Loo, 2002; Wanous & Hudy, 2001; Wanous, Reichers, & Hudy, 1997).

The first argument has been adequately addressed by Wanous and his colleagues (see for example, Wanous & Reichers, 1996) via the use of two different methods – (1) correction for attenuation, and (2) factor analysis communalities. The correction for attenuation formula has been described by Nunnally and Bernstein (1994, p. 257) as:

$$r'_{xy} = \frac{r_{xy}}{\sqrt{r_{xx} * r_{yy}}} \qquad \ldots \text{Eq. 1}$$

where r_{xy} = correlation between variables x and y, r_{xx} = reliability of variable x, r_{yy} = reliability of variable y, and r'_{xy} = estimated "true" correlation between x and y had both variables been perfectly measured. While this formula is usually applied in situations when x and y come from different domains, it has successfully been applied in the current situation where both variables come from the same conceptual domain (or are differing facets) of job satisfaction (Wanous & Hudy, 2001). In such situations, r'_{xy} is expected to equal 1.0, leaving:

$$r_{xy} = \sqrt{r_{xx} * r_{yy}} \qquad \ldots \text{Eq. 2}$$

If we presume that x is a single-item facet scale and y is an alternate multi-item facet scale, we find that we can solve the equation to estimate r_{xx} (the reliability of x) through algebraic manipulation such that:

$$r_{xx} = \frac{r_{xy}^2}{r_{yy}} \qquad \ldots \text{Eq. 3}$$

A second method previously used to estimate single-item reliability is based on factor analysis communality scores (Weiss, 1976). In their research, Wanous and Hudy (2001, p. 363)

stated that the "communality can be considered a conservative estimate of single-item reliability". Specifically, "the communality of any variable is less than or equal to the reliability of the variable" (Harman, 1967, p. 19), thus it can be used as a lower bound for estimating the reliability of a single-item facet measure.

Two other methods can also be used to provide estimates of the reliability of a single-item scale. The first is coefficient alpha, which has been noted to be a basic estimate of reliability and can be used to create an estimate for the reliability of tests constructed using the domain-sampling model (Nunnally & Bernstein, 1994). When using single-item facet measures each assessing different facets of job satisfaction, an overall scale alpha can be determined to estimate overall scale-level reliability. In addition, Nagy (2002) has also used correlations between a single-item facet measure and a corresponding multi-item facet measure as an estimate for reliability of the single-item measure. In essence, this method correlates a single-item facet measure against an existing multi-item scale (with an acceptable level of reliability that was determined beforehand) measuring the same facet. If the correlation between the two measures is high, the single-item scale can be said to exhibit adequate reliability. In other words, there are actually four methods that can or have been used to estimate the reliability of a single-item facet measure.

The second argument against the use of single-item facet measures is the low levels of reliability obtained, even when reliability can be measured in the first place (Loo, 2002). The domain-sampling model posits that reliability decreases correspondingly as the number of items measuring a single domain decreases, all else being equal, due to potentially higher measurement error (Nunnally & Bernstein, 1994). In other words, the likelihood of accurately measuring a construct is said to increase as more and more items are used in the measurement of that

construct. This is because any single item is typically viewed as an imperfect measure, and using multiple measures allows for an increased probability of capturing the overall construct. Recent research however, has shown that while there is a reduction in reliability among single-item facet measures when compared to multi-item facet measures, Cronbach's α values still approach a modest reliability level of .70 (Nagy, 2002). Other researchers have even reported estimated single-item facet reliability for supervision to be as high as .80 (Loo & Kells, 1998).

Finally, detractors of single-item measures also claim that they are insufficient when measuring complex psychological constructs (Loo & Kells, 1998). They are however appropriate when measuring sufficiently narrow or unambiguous constructs (Sackett & Larson, 1990). The review of job satisfaction presented thus far does indicate that the construct as a whole (i.e. general job satisfaction) is complex (Dipboye, et al., 1994; Hamner & Organ, 1978). However, facet measures focus on a more specific and homogenous domain compared to global job satisfaction measures (Ironson et al., 1989), and thus may be less influenced by domain sampling errors when reduced to single-item measures.[2] As a result, the review conducted thus far seems to indicate the potential for the use of single-item facet measures of job satisfaction.

Semantic differential scales

The third issue to be resolved focuses on the response scale that will be used for the new measure of job satisfaction. This is especially critical since previous measures of job satisfaction do not necessarily measure the construct in congruence to how it was defined. For example, while typically defined as an attitude or feeling, the affective component of job satisfaction seems to have been deemphasized by job satisfaction researchers (Hulin & Judge, 2003). In addition, a study by Brief and Roberson (1989) comparing three popular measures of job satisfaction – the Job Descriptive Index (Smith, Kendall, & Hulin, 1969), the Minnesota

Satisfaction Questionnaire (Weiss, Dawis, England, & Lofquist, 1967), and the Faces Scale (Kunin, 1955) – and found that job cognitions were adequately captured by these job satisfaction measures but affect was not. Specifically, among the three measures assessed only the Faces Scale successfully measured both affect and cognition. Moorman (1993) also supported this view, stating that job satisfaction measures differ in the extent to which they tap the affective or cognitive components of job satisfaction.

Given that both the affective and cognitive components of job satisfaction have different bases and predict different outcomes (Thoresen, Kaplan, Barsky, Warren, & de Chermont, 2003; Crites, et al., 1994), and that the construct would be better assessed using differing measures (see Moorman, 1993; Brief & Roberson, 1989), the one-sidedness of current measures is particularly distressing. It can also be noted that the components of an attitude (i.e. affect and cognition) are tied together and have implications for each other (Organ & Hamner, 1982), and thus failing to adequately account for both components may be one of the reasons for the low correlations thus far found between job satisfaction and the various outcome measures to which this construct is supposedly related.

Since job satisfaction has been defined as an evaluation of the job and job situation for the purposes of this study, it is imperative that the measurement scale used to tap this construct be consistent with the definition (Smith et al., 1969). Fortunately, social psychological attitude researchers provide us with methods with which to assess job satisfaction. The semantic differential measurement system in particular, has long been used in social psychology to assess social attitudes (see for a brief review, Yu, Albaum, & Swenson, 2003). In construing job satisfaction as an evaluation of the job, we can easily borrow techniques such as this to create a measurement scale that is appropriate to the current research construct (Huff, 2000).

The use of semantic differentials, however, is not without its own challenges. A review by Crites and his colleagues (Crites, et al., 1994) for example, notes the problem of using inappropriate scale end-points that focus specifically on one component of the overall attitude (i.e. fear, anger, happiness, and disgust tapping only affective tone) instead of focusing on evaluational tone (i.e. favorable – unfavorable or positive – negative). Others have also stressed the importance of adequately balancing the attitude question stem in order to avoid biasing the respondent in one way or another (see for a review, Shaeffer, Krosnick, Langer, & Merkle, 2005). As a result, researchers intent on using semantic differential scales in their studies should proceed with caution to ensure that the question stem and response end-points are designed to measure the appropriate tone (in this case evaluative).

Summary and Hypotheses

Job satisfaction is a construct that is related to various outcomes that are relevant to both the organization and its employees. Unfortunately, research conducted thus far seems to indicate weak relationships between job satisfaction and outcome variables. Researchers have proposed two main culprits – inappropriate definitions of the construct and poor measurement scales. The review of the literature conducted thus far indicates that the most appropriate definition for job satisfaction is that of an evaluation of the job or job situation or job facets.

A wide range of job satisfaction measures have been created to measure the construct, but a large percentage of variance in job satisfaction is still unaccounted for. Job satisfaction measurement scales have typically targeted both global job satisfaction and facets of the construct. Global measures are said to reflect individual differences, while facet measures reflect changes in the relevant sub-domain of the construct. Facet measures have also been successfully

combined to create a composite global measure. Studies of single-item facet measures also indicate the potential use of this method in assessing job satisfaction.

The objective of this study is therefore three-fold. First, the study focused on the creation of the Facet Satisfaction Scale (FSS), a new facet-based measure of job satisfaction. The semantic differential scale with evaluative end-points was chosen as the basis of the FSS in order to create a scale that was consistent with current definitions of the construct. As a result, the FSS is expected to exhibit good psychometric properties. Specifically, the FSS will demonstrate strong evidence of scale reliability, possess good factor structure, and account for a significant level of construct variance based on initial factor analytic data.

Hypothesis 1: The eight-facet model of the Facet Satisfaction Scale (FSS) will demonstrate strong evidence of scale reliability and possess good factor structure based on initial factor analytic data.

Secondly, in order to take advantage of the significant savings offered by single-item scales, a shortened version of the FSS will also be created and will be composed of one item assessing each factor. Since criticism of single-item facet measures have focused primarily on issues of item and scale reliability, the shortened version of the FSS will be assessed using four estimates of single-item reliability to obtain measures of scale reliability.

Hypothesis 2: The shortened Facet Satisfaction Scale will demonstrate acceptable levels of facet reliability as measured by four distinct estimates of single-item reliability.

Finally, preliminary analysis will be conducted to determine if both the complete and shortened versions of the FSS will have significant predictive validity over outcome measures typically associated with the job satisfaction construct. The outcome measures selected for this

analysis were intent to quit and job performance (both in-role and organizational citizenship behaviors).

Hypothesis 3: Both the complete and shortened versions of the Facet Satisfaction Scale will significantly predict intent to quit and job performance.

CHAPTER 2

METHODS

Participants

Study participants included University of North Texas undergraduate students working full- or part-time. The only prerequisite for participation was that the individual had worked with their current employer for a period of at least 30 days, at a rate of 15 hours a week or more. This requirement was put in place to ensure that the participants had adequate time to form proper attitudes towards their jobs and avoid initial instabilities of their job attitudes due to honeymoon or hangover effects (see Boswell, Boudreau, & Tichy, 2005). No other demographic constraints were placed on participants for eligibility. A pool of 820 (29.7% male, 70.3% female) student participants who met these criteria was included in this study. The participants had an average age of 21.1 years and worked an average of 25.1 hours a week. The average position tenure for the sample was 13.9 months, while the average organization tenure was 16.4 months.

Procedure

Individuals interested in participating in this study were directed to the survey website for additional information. Participants were then asked to read and agree to the informed consent documentation before being allowed to proceed with the online survey. The participants were required to complete the online survey measuring various aspects of their attitudes towards their current job, as well as measures of demographic data. The survey took between 45 to 60 minutes to complete. Students enrolled in psychology courses and who wished to receive extra course credit for participation were asked to provide their names, university identification number, and contact information after completing the survey. This information was used for record-keeping purposes only (the information was kept separate from the survey materials, thus allowing for

complete anonymity of the participants). The study investigator then used the university extra credit system or contacted the participant's instructor directly to provide the appropriate number of extra credit points to each participant.

Measures

A brief description of the scales used in this survey is listed below.

Facet Satisfaction Scale.

The Facet Satisfaction Scale (FSS: Yeoh, 2006) is being created in order to address the problems associated with measuring job satisfaction. Envisioned as both a single-item and multi-item facet measure, eight items were created to analyze each of the eight facets (for a total of 64 items). The facets examined by this scale are pay, promotion, supervisors, co-workers, the work, benefits, procedures, and physical work conditions, all of which have been shown by research to be significant job satisfaction facets (see for examples, Hatfield, et al., 1985, Spector, 1985, Dunham & Smith, 1979, Smith, et al., 1969). Each item is assessed using a semantic differential scale, and the item stem and scale endpoints is designed to elicit an individual's evaluations of his/her job using wording similar to those found in the General Evaluation Scale (Crites, Fabrigar, & Petty, 1994). Exploratory and confirmatory factor analysis methodology was used to identify the items to be included in the final version of the scale.

Comparison measures.

Three comparison measures of job satisfaction will be used in initial validity studies to compare the predictive validity of the FSS against established scales of job satisfaction. These measures were three items from the Job Diagnostic Survey (JDS: Hackman & Oldham, 1974) assessing job satisfaction (reliability scores ranging from .55 to .92 reported in Fields, 2002), the four-item Job Evaluation measure by Crites, Fabrigar, and Petty (1994), and the Faces scale

(Kunin, 1955). The Faces scale is a single-item scale measuring global job satisfaction. Participants are required to circle the face that corresponds best to their feelings about their job in general. Internal consistency reliability was reported at .88 (Lau & Murnighan, 2005). A version of the scale slightly altered by Huff (2002) to appear more androgynous will be used in this study.

Outcome measures.

Outcome measures were used as a preliminary measure of criterion-related validity of the scale. Participants were asked to rate their intention to quit and job performance. A single-item question was created to measure the participants' intention to quit. This item used a seven-point Likert response scale that asked participants to rate how often they thought of quitting their current job. The scale ranged from "No intention at all" to "All the time." Participants were also asked to rate themselves on in-role and organizational citizenship behaviors. This was done using the Organizational Citizenship Behaviors measure developed by Williams and Anderson (1991), which included subscales for citizenship behaviors directed at individuals (OCBI) and the organization (OCBO) as well as in-role behaviors (i.e. on-the-job performance) (IRB). Seven items measured each subscale using a five-point Likert response format ranging from "Strongly disagree" to "Strongly agree". Coefficient alpha values for these subscales ranged from .61 to .96 (see Fields, 2002) for a brief review.

Demographic information.

Demographic information about the participants was collected at the end of the survey. This included measures of participant age, gender, educational level, position and organizational tenure, brief questions addressing the participants' industry and the type of work done, hours worked in a week, and salary range.

CHAPTER 3

RESULTS

Initial Analysis of All Items

The means, standard deviations, and percent of missing values for the FSS subscales are presented by facet in Tables 1-8. Due to a clerical error during the creation of the online survey, one item from the physical working conditions subscale (PWC5) was left out of the survey and thus was unavailable for analysis. Missing values were not significant across the FSS items (less than 5% missing values for all items except PROM2, which had 5.12% missing values). Missing values were deleted listwise, leaving a total of 681 cases available for use in the initial factor analysis.

Table 1
Means, Standard Deviation, and Percent of Missing Values for the Initial FSS Pay Subscale

	PAY1	PAY2	PAY3	PAY4	PAY5	PAY6	PAY7	PAY8
M	3.84	4.27	4.28	4.4	4.03	4.18	3.96	4.25
SD	1.49	1.54	1.43	1.39	1.45	1.51	1.62	1.48
Missing (%)	0.85	4.27	1.22	3.05	1.83	2.20	4.39	3.41

Table 2
Means, Standard Deviation, and Percent of Missing Values for the Initial FSS Promotion Subscale

	PROM1	PROM2	PROM3	PROM4	PROM5	PROM6	PROM7	PROM8
M	3.95	3.89	4.12	3.69	3.96	3.79	4	3.82
SD	1.48	1.52	1.37	1.55	1.51	1.55	1.50	1.46
Missing (%)	4.02	5.12	3.90	1.71	1.46	1.22	4.88	1.46

Table 3
Means, Standard Deviation, and Percent of Missing Values for the Initial FSS Supervisor Subscale

	SUPE1	SUPE2	SUPE3	SUPE4	SUPE5	SUPE6	SUPE7	SUPE8
M	4.98	4.88	5	4.95	4.64	4.71	4.9	4.63
SD	1.32	1.31	1.15	1.19	1.50	1.42	1.32	1.42
Missing (%)	2.20	2.56	0.98	2.56	0.85	1.95	3.66	4.63

Table 4
Means, Standard Deviation, and Percent of Missing Values for the Initial FSS Co-workers Subscale

	COWO1	COWO2	COWO3	COWO4	COWO5	COWO6	COWO7	COWO8
M	4.9	5.35	4.5	4.94	5.06	5.12	4.98	5.18
SD	1.17	0.89	1.32	1.18	1.05	1.05	1.15	1.03
Missing (%)	4.63	3.66	0.98	4.15	4.39	3.17	4.76	4.39

Table 5

Means, Standard Deviation, and Percent of Missing Values for the Initial FSS Work Subscale

	WORK1	WORK2	WORK3	WORK4	WORK5	WORK6	WORK7	WORK8
M	5.27	4.06	4.86	4.77	4.24	4.64	4.86	4.31
SD	0.91	1.38	1.07	1.27	1.57	1.31	1.34	1.40
Missing (%)	2.20	0.85	1.83	2.07	4.15	2.20	4.39	4.27

Table 6

Means, Standard Deviation, and Percent of Missing Values for the Initial FSS Benefits Subscale

	BENE1	BENE2	BENE3	BENE4	BENE5	BENE6	BENE7	BENE8
M	4.1	3.67	3.77	3.73	4.08	3.81	3.82	3.93
SD	1.50	1.63	1.57	1.56	1.53	1.57	1.69	1.55
Missing (%)	3.90	1.71	4.76	2.93	3.78	2.93	1.10	2.56

Table 7

Means, Standard Deviation, and Percent of Missing Values for the Initial FSS Procedures Subscale

	PROC1	PROC2	PROC3	PROC4	PROC5	PROC6	PROC7	PROC8
M	4.38	4.87	4.47	4.28	4.53	4.53	4.19	4.52
SD	1.33	1.06	1.24	1.24	1.21	1.18	1.22	1.32
Missing (%)	3.17	1.34	0.85	4.88	2.56	2.32	0.98	3.54

Table 8

Means, Standard Deviation, and Percent of Missing Values for the Initial FSS Physical Working Conditions Subscale

	PWC1	PWC2	PWC3	PWC4	PWC5[a]	PWC6	PWC7	PWC8
M	4.21	4.89	5.04	4.59	N/A	4.8	4.47	4.56
SD	1.27	1.16	1.19	1.25	N/A	1.15	1.31	1.25
Missing (%)	3.54	3.29	3.41	3.05	N/A	2.20	4.51	3.78

[a]Item PWC5 was omitted from the original survey due to clerical error and is not available for analysis.

In order to account for the potential intercorrelations among the different facets of job satisfaction, an initial maximum likelihood promax rotation factor analysis using SPSS (v.14) FACTOR was conducted on the remaining 63 items of the FSS data. The promax rotation was chosen since it provided the simplest factor structure and allowed for intercorrelations between the factors. The factor analysis discovered an eight-factor structure for the data based on the eigenvalue more than 1.0 criterion. This eight-factor structure accounted for 73.74% of the total variance explained. Analysis of the factor analysis pattern matrix indicated significant factor loadings for the pay, promotion, supervisor, coworkers, work, and benefits subscales (all loadings above .3), whereby each of these subscales loaded onto six separate factor headings.

The items in the procedures subscale evidenced a significant cross-loading (PROC4) across two factors (the work and an eighth factor heading), while the physical working conditions items either cross-loaded onto two factor headings (PWC1, PWC2, PWC6, and PWC7) or loaded on an alternate factor heading (PWC3). Initial factor loadings for the eight-factor maximum likelihood promax rotation can be found in Table 9. In addition, Table 10 shows the factor correlation matrix for the initial eight-factor 63-item FSS.

An analysis of the scree plot (see Figure 1) and of the pattern matrix indicated the possibility that the data would fit a six-factor structure. As a result a six-factor maximum likelihood promax rotation factor analysis was also conducted on the research data. The six-factor structure accounted for 70.02% of total variance explained. The items for the pay, promotion, supervisor, coworkers, and benefits subscales loaded significantly (all loadings above .3) onto five separate factor headings. The items for the work, procedures, and physical working conditions loaded significantly onto a sixth factor (all loadings above .3), and did not show any significant cross-loadings unlike the eight-factor structure (see Table 11). The factor correlation matrix for the six-factor structure is described in Table 12.

Internal consistency reliability analyses using Cronbach's α were conducted on each of the eight expected subscales in the initial model using all 63 FSS items (see Table 13). The results ranged from .91 for the procedures subscale, to .97 for the benefits subscale, indicating high levels of internal consistency among the items within each subscale. In addition, taking into account findings from the six-factor factor analysis indicating that the work, procedures, and physical working conditions subscales loaded onto the same factor, a Cronbach's α was conducted to assess internal consistency of these three subscales combined into a work-related factor (see Table 1). Results showed a Cronbach's α value of .96 for the combined subscale. The

Table 9

Initial 8-Factor Promax Rotation Factor Loadings for All 63 FSS Items[a]

	Factor							
	1	2	3	4	5	6	7	8
PAY1			0.939					
PAY2			0.813					
PAY3			0.826					
PAY4			0.630					
PAY5			0.952					
PAY6			0.867					
PAY7			0.910					
PAY8			0.908					
PROM1						0.887		
PROM2						0.766		
PROM3						0.776		
PROM4						0.856		
PROM5						0.789		
PROM6						0.713		
PROM7						0.887		
PROM8						0.706		
SUPE1					0.870			
SUPE2					0.949			
SUPE3					0.743			
SUPE4					0.825			
SUPE5					0.741			
SUPE6					0.881			
SUPE7					0.979			
SUPE8					0.824			
COWO1				0.922				
COWO2				0.667				
COWO3				0.571				
COWO4				0.945				
COWO5				0.856				
COWO6				0.877				
COWO7				0.945				
COWO8				0.903				
WORK1	0.629							
WORK2	0.725							
WORK3	0.826							
WORK4	1.015							
WORK5	0.914							
WORK6	0.866							
WORK7	0.570							
WORK8	0.941							
BENE1		0.830						
BENE2		0.939						
BENE3		0.825						
BENE4		0.900						
BENE5		0.916						
BENE6		0.930						
BENE7		0.735						
BENE8		0.934						
PROC1	0.876							
PROC2	0.557							
PROC3	0.508							
PROC4	0.640							0.369
PROC5	0.755							
PROC6	0.428							
PROC7	0.517							
PROC8	0.481							
PWC1	0.500							0.366
PWC2	0.423						0.641	
PWC3							0.471	
PWC4	0.482							
PWC6	0.429						0.544	
PWC7	0.619						0.308	
PWC8	0.479							

[a]Factor loadings less than .300 suppressed

Table 10

Factor Correlation Matrix for the Initial FSS 8-Factor Structure (All 63 FSS Items)

Factor	*M*	*SD*	1	2	3	4	5	6	7
1. Pay	4.15	1.32							
2. Promotion	3.90	1.27	.58**						
3. Supervisor	4.84	1.16	.36**	.44**					
4. Co-workers	4.99	0.97	.31**	.35**	.49**				
5. Benefits	3.85	1.42	.54**	.60**	.33**	.31**			
6. Work	4.62	1.04	.51**	.50**	.56**	.55**	.39**		
7. Procedures	4.47	0.98	.54**	.57**	.60**	.52**	.45**	.82**	
8. Physical working conditions	4.65	1.01	.48**	.50**	.56**	.53**	.42**	.77**	.81**

**$p < .001$

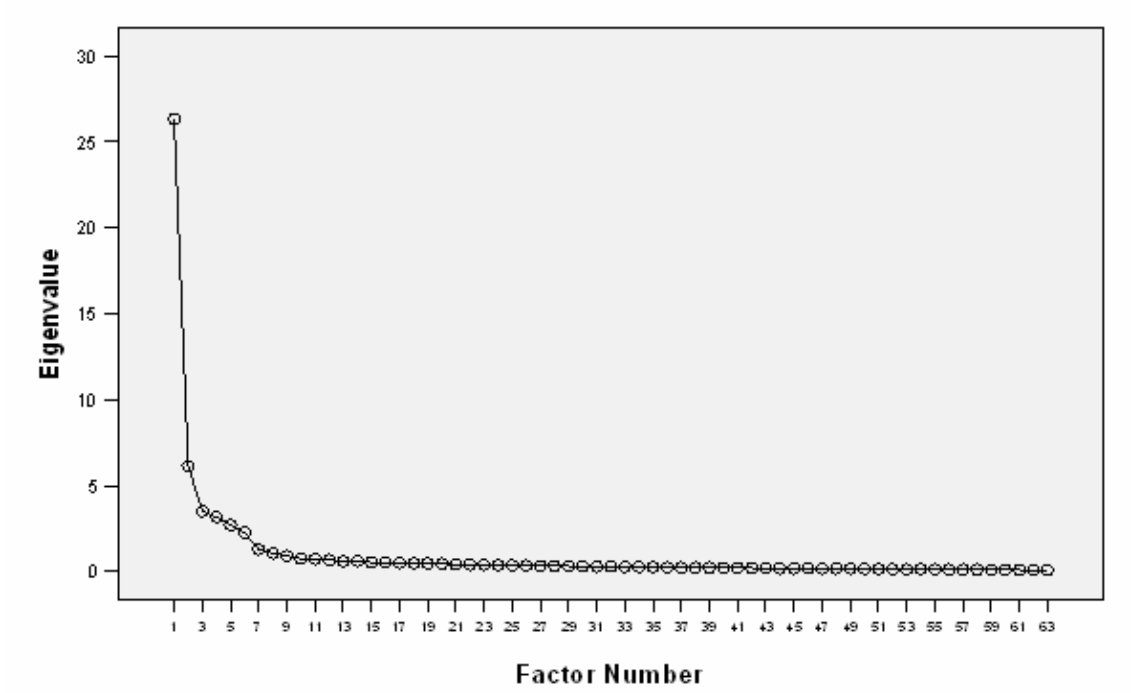

Figure 1. Scree plot for the maximum likelihood promax factor analysis of all 63 FSS items.

Table 11

Initial 6-Factor Promax Rotation Factor Loadings for All 63 FSS Items[a]

	Factor					
	1	2	3	4	5	6
FSSPAY1			0.939			
FSSPAY2			0.808			
FSSPAY3			0.825			
FSSPAY4			0.63			
FSSPAY5			0.956			
FSSPAY6			0.866			
FSSPAY7			0.913			
FSSPAY8			0.9			
FSSPROM1						0.885
FSSPROM2						0.771
FSSPROM3						0.78
FSSPROM4						0.871
FSSPROM5						0.784
FSSPROM6						0.726
FSSPROM7						0.895
FSSPROM8						0.721
FSSSUPE1					0.874	
FSSSUPE2					0.95	
FSSSUPE3					0.738	
FSSSUPE4					0.824	
FSSSUPE5					0.752	
FSSSUPE6					0.886	
FSSSUPE7					0.969	
FSSSUPE8					0.833	
FSSCOWO1				0.913		
FSSCOWO2				0.666		
FSSCOWO3				0.566		
FSSCOWO4				0.932		
FSSCOWO5				0.842		
FSSCOWO6				0.871		
FSSCOWO7				0.93		
FSSCOWO8				0.895		
FSSWORK1	0.637					
FSSWORK2	0.671					
FSSWORK3	0.803					
FSSWORK4	0.889					
FSSWORK5	0.765					
FSSWORK6	0.803					
FSSWORK7	0.549					
FSSWORK8	0.881					
FSSBENE1		0.824				
FSSBENE2		0.941				
FSSBENE3		0.825				
FSSBENE4		0.905				
FSSBENE5		0.915				
FSSBENE6		0.928				
FSSBENE7		0.741				
FSSBENE8		0.934				
FSSPROC1	0.872					
FSSPROC2	0.657					
FSSPROC3	0.569					
FSSPROC4	0.714					
FSSPROC5	0.811					
FSSPROC6	0.568					
FSSPROC7	0.569					
FSSPROC8	0.581					
FSSPWC1	0.702					
FSSPWC2	0.791					
FSSPWC3	0.474					
FSSPWC4	0.685					
FSSPWC6	0.744					
FSSPWC7	0.863					
FSSPWC8	0.72					

[a]Factor loadings less than .300 suppressed

Table 12

Factor Correlation Matrix for the Initial FSS 6-Factor Structure (All 63 FSS Items)

Factor	*M*	*SD*	1	2	3	4	5
1. Pay	4.15	1.32					
2. Promotion	3.90	1.27	.58**				
3. Supervisor	4.84	1.16	.36**	.44**			
4. Co-workers	4.99	0.97	.31**	.35**	.49**		
5. Benefits	3.85	1.42	.54**	.60**	.33**	.31**	
6. Work-related	4.57	0.94	.55**	.56**	.61**	.57**	.45**

**$p < .001$

Table 13

Cronbach's α Values for the Initial Subscales of the FSS (All 63 Items Used)

Factor	Cronbach's α	Range of item-total correlations
Pay	.96	.68 - .92
Promotion	.94	.76 - .87
Supervisor	.96	.69 - .91
Coworkers	.95	.63 - .89
Work	.92	.58 - .83
Benefits	.97	.79 - .91
Procedures	.91	.63 - .79
Physical working conditions	.92	.60 - .81
Work-related[a]	.96	.53 - .83

[a]A combination of the work, procedures, and physical working conditions subscales.

high Cronbach's α value, combined with the high intercorrelations between the work, procedures, and physical working conditions factors previously displayed in Table 10 shows evidence that the three subscales may indeed be measuring the same facet, thus suggesting that a six-factor model may be a good fit to the FSS data.

Item Selection for the Complete Facet Satisfaction Scale (FSS)

The next step in the data analysis was to select items that would be used in the final version of the Facet Satisfaction Scale (FSS). The decision was made to create a scale comprised of four items measuring each facet in order to exhibit adequate factor structure (see for a brief review, Acito & Anderson, 1980) and to maintain consistency with existing job satisfaction scales such as the Job Satisfaction Survey (Spector, 1985) and Job Perception Scale (Hatfield, Robinson, & Huseman, 1985). The selection criterion was based on Fabrigar, Wegener,

MacCallum, and Strahan's (1999) recommendation, whereby the items with the highest reliability index (in this case, the items with the highest factor loadings) were selected as the items of choice to make up a scale. As a result, thirty-two items were selected to make up the eight-facet FSS. In addition, an alternate 24-item six-facet FSS was also created for model testing (based on the possible significance of a six-factor model hinted at by initial data analysis) to determine the best factor structure for the final version of the FSS. These two models were compared against each other and their respective null models using R (v. 2.4.1) confirmatory factor analysis (CFA). This resulted in the following six comparison models (see Figures 2-7):

1. 8-factor model without a higher-order job satisfaction factor before item deletion
2. 8-factor model with a higher-order job satisfaction factor before item deletion
3. 8-factor model with a higher-order job satisfaction factor after item deletion
4. 6-factor model without a higher-order job satisfaction factor before item deletion
5. 6-factor model with a higher-order job satisfaction factor before item deletion
6. 6-factor model with a higher-order job satisfaction factor after item deletion

Specifically, the original hypothesized 8-factor model (Model 3) consisted of four items measuring each of the eight facets (pay, promotion, supervisor, co-workers, work, benefits, procedures, and physical working conditions. This model was compared against two null models (Models 1 and 2). The first null model (Model 1) was specified without a higher-order job satisfaction factor, essentially allowing the eight facets to correlate with each other due to chance. The second null model (Model 2) specified a higher-order job satisfaction factor onto the factors, using this higher-order factor to account for the intercorrelations between the eight facets. If indeed the eight factors were facets measuring various aspects of job satisfaction, the second null model (Model 2) should be a better fitting model than the null model that did not

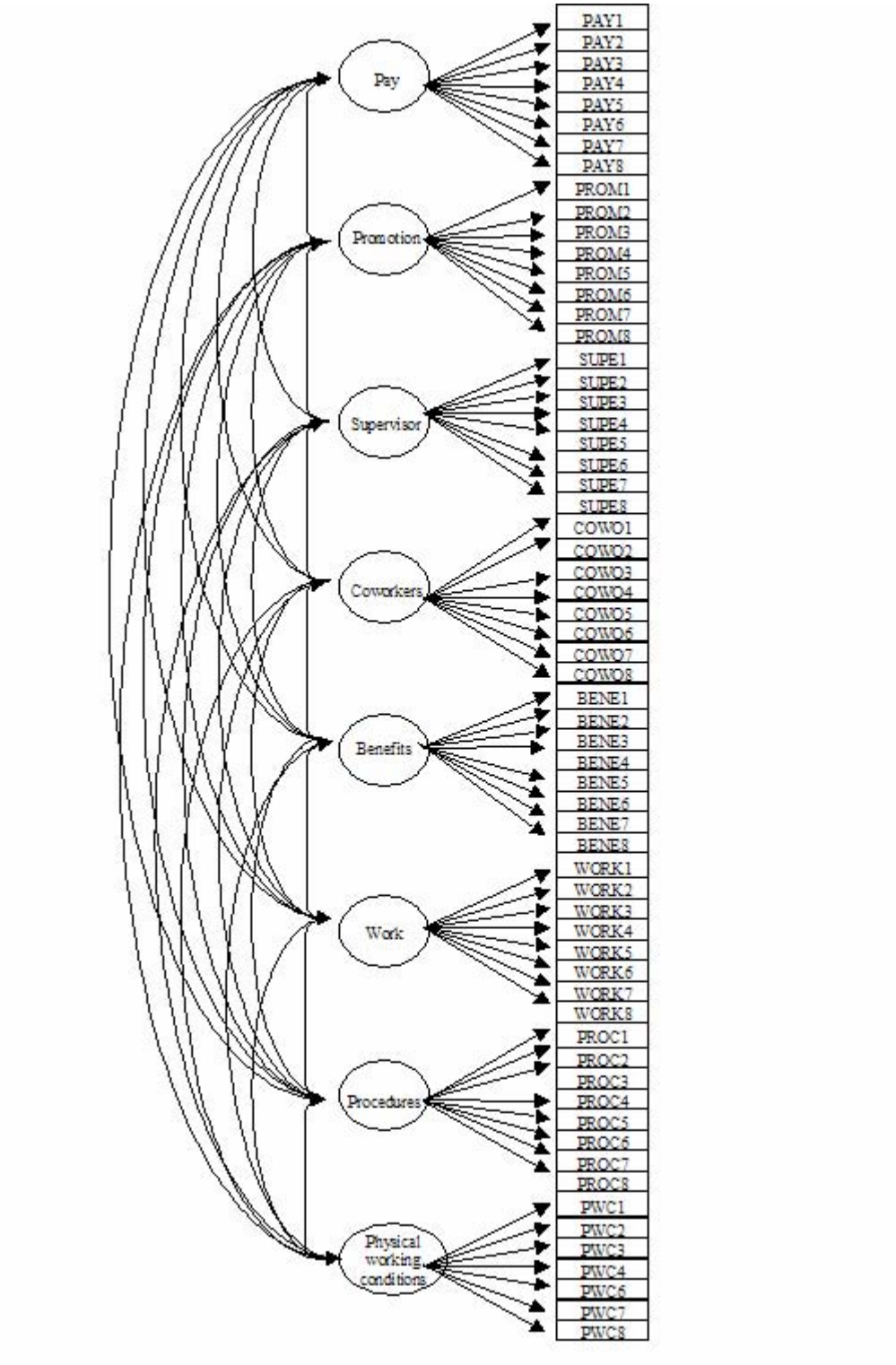

Figure 2. Model 1 (63-item 8-facet lower-order null model).

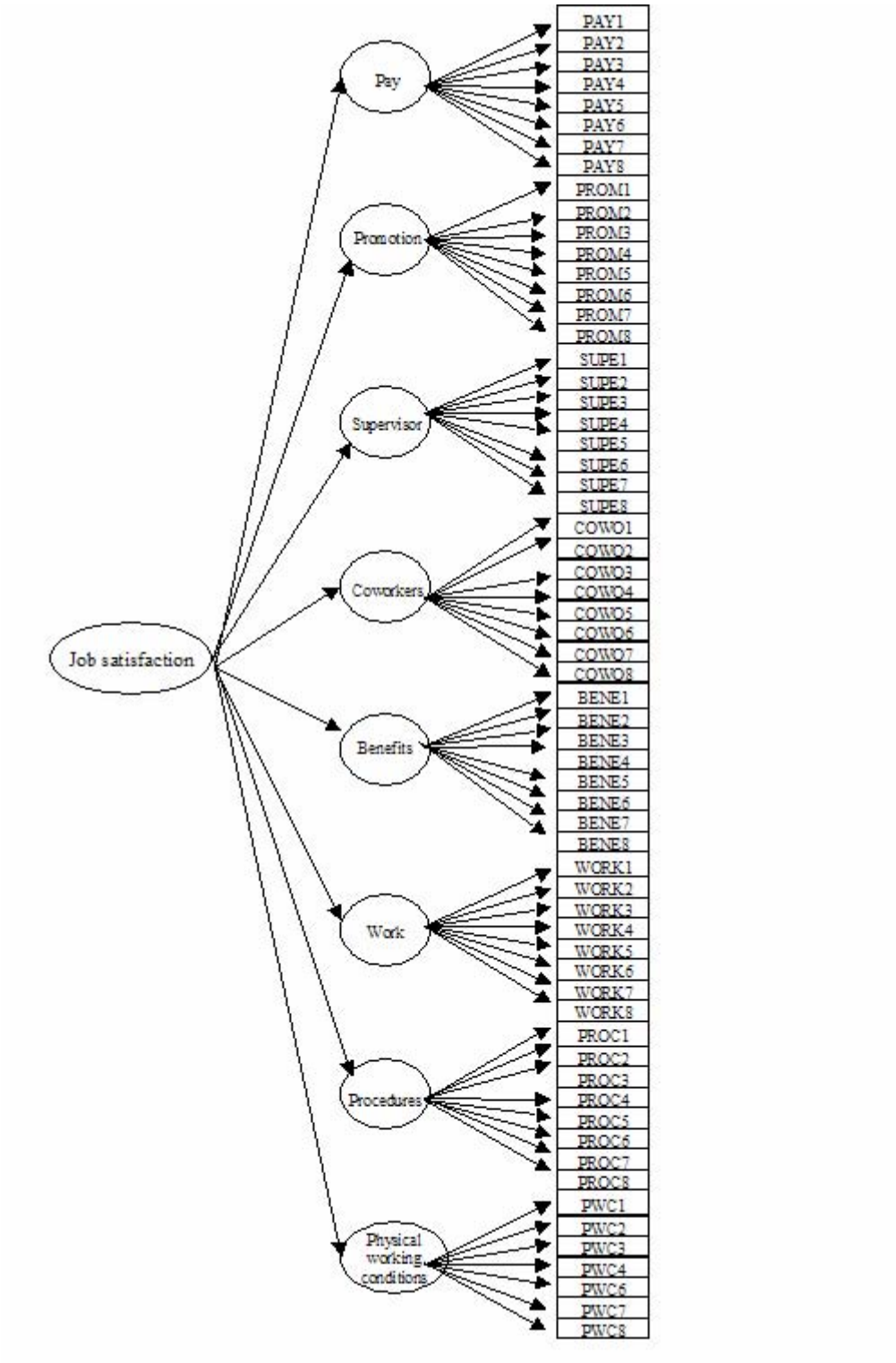

Figure 3. Model 2 (63-item 8-facet higher-order null model).

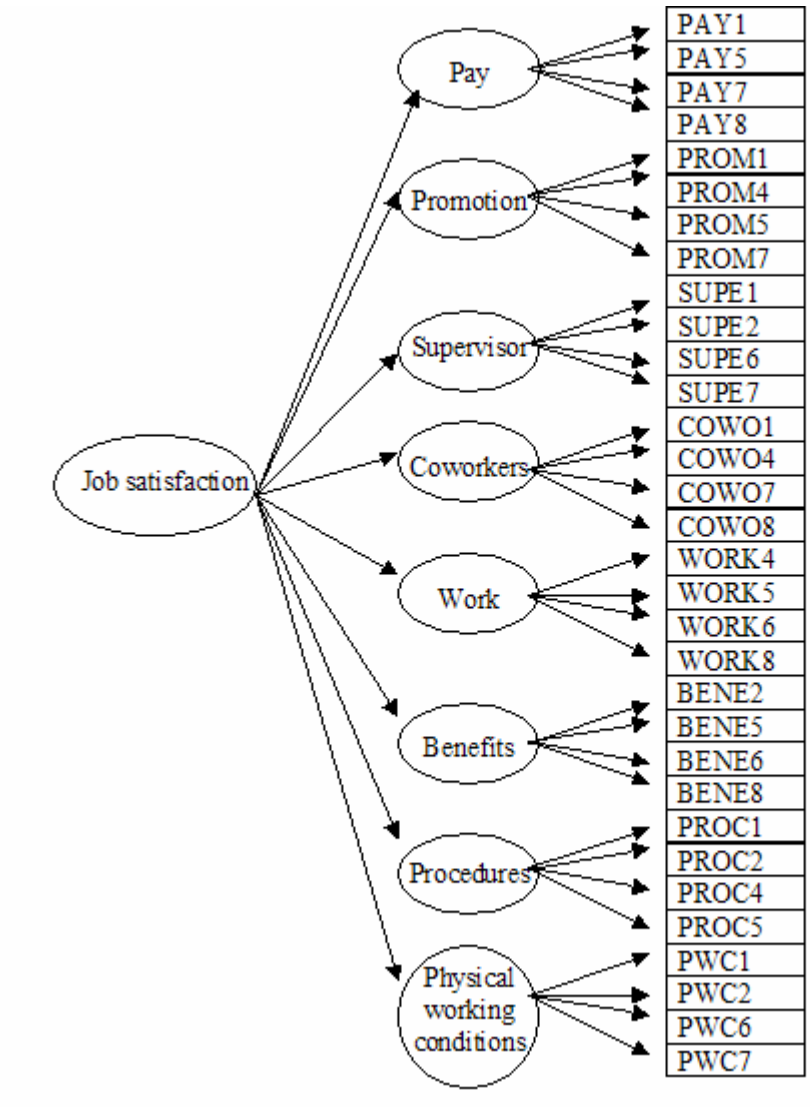

Figure 4. Model 3 (32-item 8-facet hypothesized FSS).

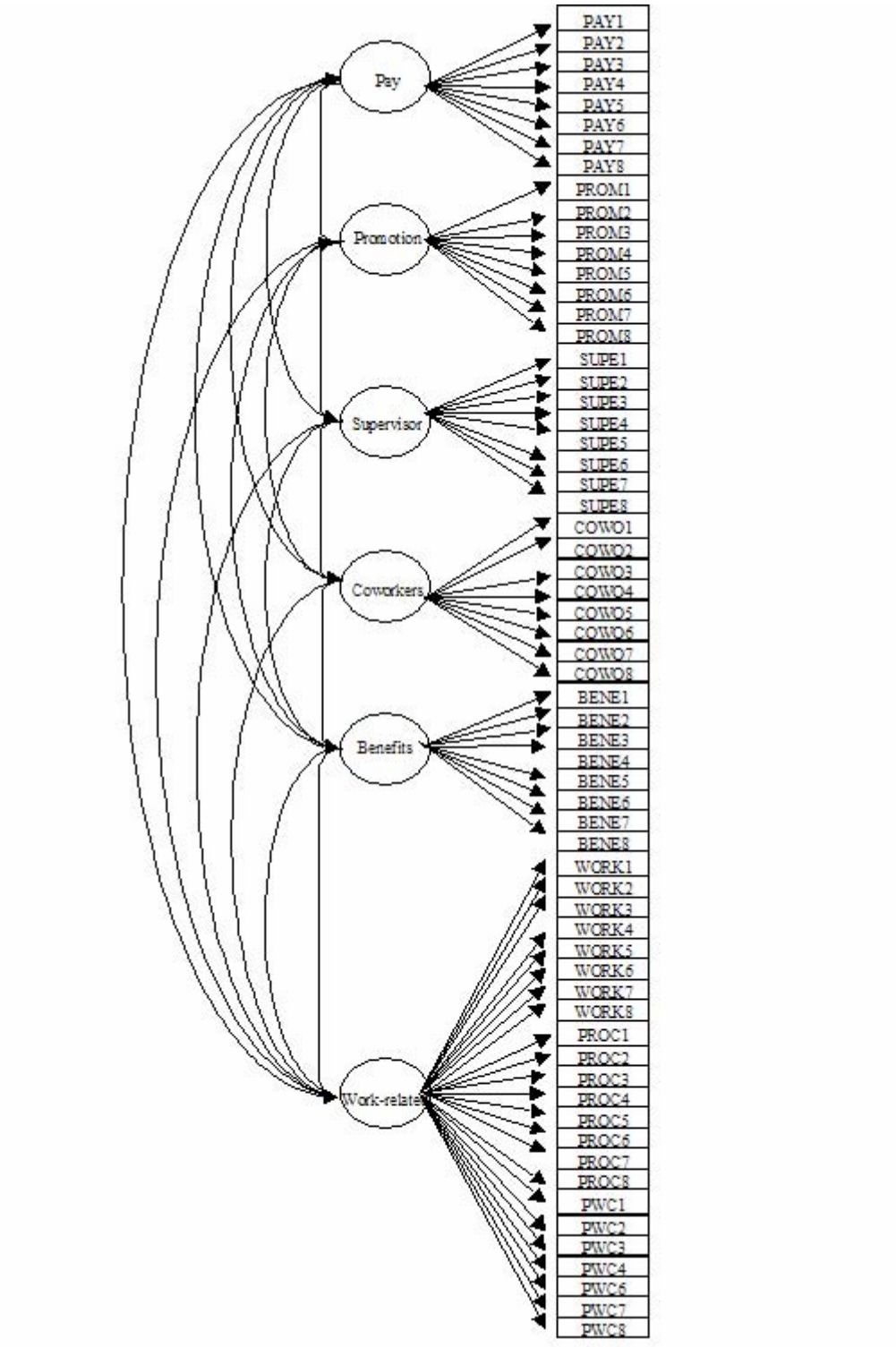

Figure 5. Model 4 (63-item six-facet lower-order null model).

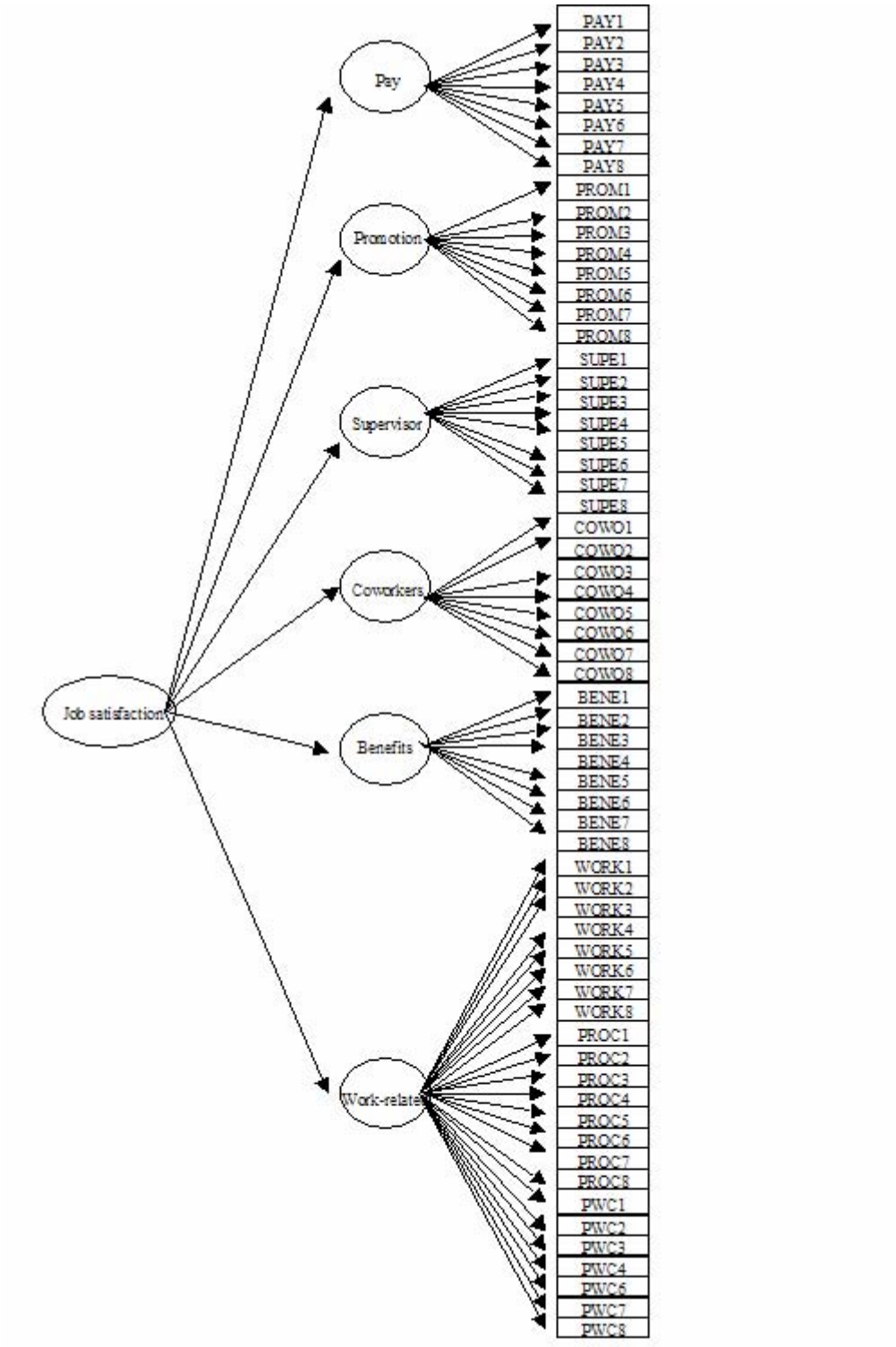

Figure 6. Model 5 (63-item 6-facet higher-order null model).

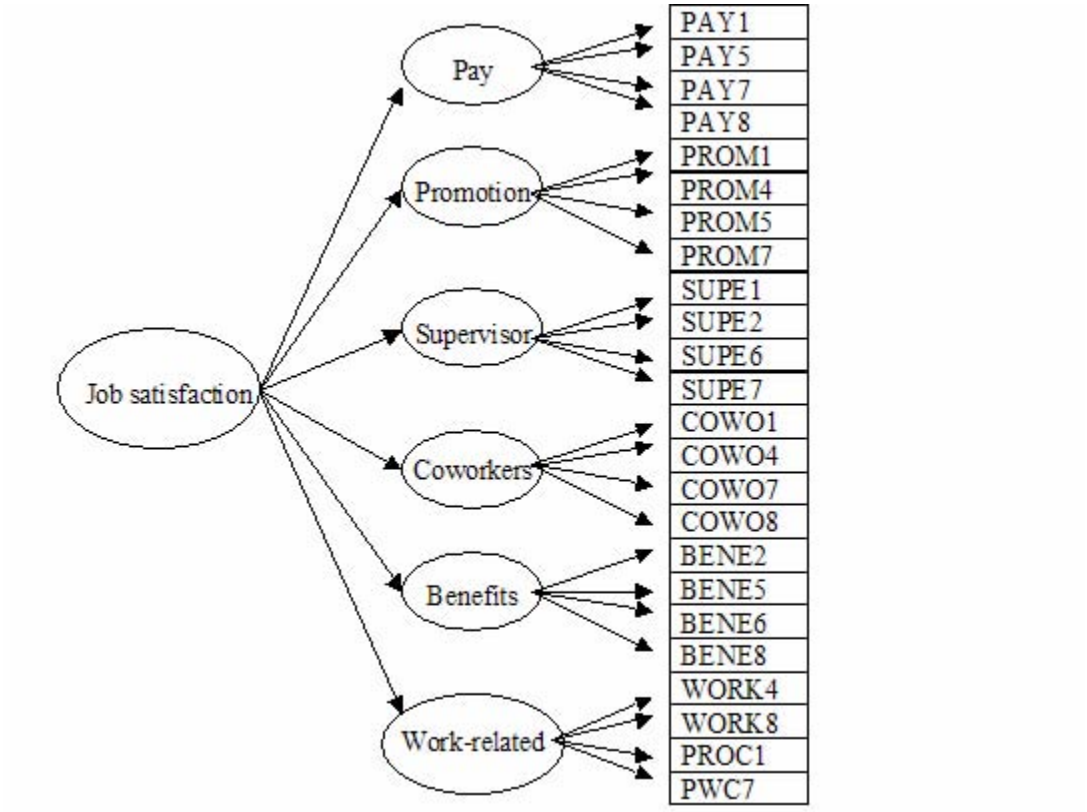

Figure 7. Model 6 (24-item 6-facet hypothesized FSS).

specify a higher-order job satisfaction factor (Model 1). Furthermore, the hypothesized eight-factor (32-item) FSS model (Model 3) should demonstrate better fit indices than both Models 1 and 2 since the items with the lowest factor loadings were removed to create the final scale. In addition, since initial analysis of the FSS data hinted at a possible six-factor structure, a second set of models was also compared. Like the original hypothesized eight-factor model, this six-factor model (Model 6) also consisted of four items measuring each of the six facets (pay, promotion, supervisor, co-workers, work-related, and benefits). This six-factor model was compared to two other null models (Models 4 and 5) using the same logic.

The model fit indices for these model comparisons are described in Table 14. Model fit was assessed using the goodness-of-fit index (GFI), adjusted GFI (AGFI), root mean square error of approximation (RMSEA), Bentler-Bonnett normed fit index (NFI), Tucker-Lewis non-normed fit index (NNFI), and the Bentler comparative fit index (CFI). It must be noted here that although the chi-square model fit statistic was reported in this study, it was not used to determine model fit. This was due to the fact that the chi-square method of assessing model fit tends to be significant regardless of actual goodness of model fit when dealing with large sample sizes (see for a review, Kline, 2005), as was the case in this study.

Conventional model fit thresholds were used whereby moderate and good fit were assumed given NFI, NNFI, CFI, GFI, and adjusted GFI values above .90 and .95 respectively; and RMSEA values were below .08 and .06 respectively (Beauducel & Wittmann, 2005). Results for the eight-factor models were consistent with prior predictions. Model 1 had the worst fit of all the eight-factor models. Fit indices for Model 2 were better across the board compared to Model 1, but were surpassed by the fit indices for the hypothesized eight-factor (32-item) Model

3 (except for slight differences in the RMSEA index, although both Model 2 and Model 3 were within the range described as good fit by Kline, 2005).

Similar results were found for the six-factor models. Again, the lower order null model for the six-factor models (Model 4) exhibited the poorest fit indices. The higher-order null model (Model 5) exhibited slightly better fit indices, but was surpassed by the final six-factor (24-item) hypothesized model (Model 6). Model 6 actually showed good fit for four of the six fit indices used (RMSEA, NFI, NNFI, and CFI) and moderate fit for the GFI. The adjusted GFI for this model approached moderate fit at .89.

Table 14
Model Fit Indices[a]

Fit indices	8 Factor Models			6 Factor Models		
	Model 1 (63-item lower order null model)	Model 2 (63-item higher order null model)	Model 3 (Final 8-factor 32-item FSS)	Model 4 (63-item lower order null model)	Model 5 (63-item higher order null model)	Model 6 (Final 6-factor 24-item FSS)
GFI	.655	.775	.866	.694	.746	.908
AGFI	.632	.760	.846	.674	.728	.889
RMSEA	.072	.053	.059	.067	.058	.058
NFI	.813	.879	.928	.832	.864	.951
NNFI	.843	.914	.944	.864	.898	.962
CFI	.848	.917	.948	.868	.902	.966
Chi-square[b]	8505.6**	5505.9**	1561.5**	7622.3**	6164.7**	811.68**
DF	1894	1886	459	1894	1888	249

[a]Refer to Figures 2-7 for model diagrams.
[b]Chi-square values are reported, but were not used to predict model fit.
** $p < .01$

Finally, the hypothesized 32-item eight-factor (Model 3) and the 24-item six-factor (Model 6) models were compared for goodness of fit to determine which model would be used for the creation of the final FSS (see Table 14). Even though both these models fit the data well according to the RMSEA index, results of the NFI, NNFI, and CFI fit indices showed that the

six-factor model exhibited good fit compared to the moderate fit of the eight-factor model. The six-factor model was also a better fitting model compared to the eight-factor model using the criterion established for the GFI. In addition, the high Cronbach's α value for the combined work, procedures, and physical working conditions subcales discovered during the initial reliability analysis and the high intercorrelations between these three subscales further provides support for the decision to combine these three separate subscales into a single work-related subscale as was done in the case of the 24-item six-factor Model 6.

Simply put, a six-factor model would be more psychometrically sound and parsimonious, therefore, the decision was made to create a final 24-item version of the FSS consisting of four items loading on each of the six factors (Model 6). In addition, the reliability measures for each facet subscale of this final version of the FSS was analyzed using SPSS scale reliability. The Cronbach's α values for the factors ranged from .89 for the work-related factor to .95 for the pay, co-workers, and benefits factors (see Table 15). Thus, these results show support for Hypothesis 1, in that the final complete FSS does exhibit good factor structure and reliability.

Table 15
Cronbach's α Values for the Final 24-item 6-factor Complete FSS

Factor	Cronbach's α	Range of item-total correlations
Pay	.95	.85 - .92
Promotion	.92	.78 - .83
Supervisor	.94	.81 - .91
Coworkers	.95	.81 - .90
Work-related[a]	.89	.70 - .81
Benefits	.95	.85 - .89

[a]The Work-related facet consists of the following items: Work4, Work8, Proc1, PWC7

Item Selection for the Shortened FSS

The item that had the highest factor loading within each subscale of the 24-item six-facet FSS was selected to make up the shortened version of the FSS (the single-item per facet FSS). In

keeping with the six-factor model described above, the shortened FSS contained one item from each of the pay, promotion, supervisor, coworkers, work-related, and benefit facets. The reliability estimates for these items are listed in Table 16.[3] Estimates of reliability based on factor analysis communalities provided the lower boundary for reliability (see for a review, Harman, 1976) of the shortened version of the FSS. These communalities were obtained from the results of the maximum likelihood promax rotation factor analysis for the complete FSS (24-item six-facet scale), and ranged from .76 for the promotion and work-related item to .92 for the pay item. Correction for attenuation reliability estimates (Eq. 3) for the data ranged from .89 to .96, which was much higher than those reported to be within the "reasonable" range of .70 by Wanous, Reichers, and Hudy (1997) and Nagy (2002), or even the .80 reported by Loo and Kells (1998).

Table 16
Single-Item Reliability Estimates for the Shortened FSS (1 Item Measuring Each Facet)[a]

	Pay	Promotion	Supervisor	Co-workers	Work-related	Benefits
Factor analysis communality	.92	.76	.89	.88	.76	.85
Correction for attenuation	.96	.89	.95	.94	.91	.93
Single-item and four-item FSS subscales correlation	.96	.90	.95	.94	.90	.94
Average estimated reliability	.95	.85	.93	.92	.86	.91

[a]Actual items used to create the shortened FSS were PAY5, PROM4, SUPE7, COWO7, WORK8 (for the work-related factor), and BENE8 respectively.

Finally, correlations between single-item facet measures on the shortened FSS and their corresponding four-item scales from the 24-item six-facet FSS measure provided a third reliability estimate. Essentially, a simple correlation was run between each single-item facet measure on the shortened FSS and their corresponding complete (24-item six-facet) FSS subscale (i.e. PAY5 with the complete FSS Pay subscale). The reliability estimate provided by

these correlations ranged from .90 for the promotion and work-related items to .96 for the pay item. In addition, a mean score of single-item reliability was also calculated, by averaging the reliability scores from the three previous estimates of single-item reliability in accordance with the method employed by Nagy (2002). This overall average single-item reliability score was used as a summary score of the various single-item reliability estimates, and ranged from .85 for the promotion item to .95 for pay, which was described as good to excellent levels of reliability (Charter, 2003).

In addition to the three estimates for single-item reliability presented in Table 16, an analysis of internal consistency reliability using Cronbach's α was also run on the six items used to form the shortened FSS. The Cronbach's α reported using SPSS (v.14) was .78, which corresponds to the range listed by Charter (2003) as a fair level of reliability. The lower α level reported (compared to the other three estimates of single-item reliability) was expected, considering that α is a measure of internal consistency of a scale, which in this instance would be lower since the shortened FSS uses six-items to measure six different facets.

Initial Analysis of FSS Predictive Ability

As an initial validity study, the complete 24-item six-facet FSS was used as a predictor of common job satisfaction outcome measures, including intent-to-quit, organizational citizenship behaviors towards individuals (OCBI) and the organization (OCBO), and in-role behaviors (IRB). In addition, three other scales of general job satisfaction – the Faces scale (Kunin, 1955), the Job Diagnostic Survey (JDS: Hackman & Oldham, 1974), and a Job Evaluation measure (Crites, Fabrigar, & Petty, 1994) were also used as comparison measures to determine initial predictive validity of the complete six-facet FSS. Specifically, three hierarchical regression analyses were run on each of the four outcome measures. Each of the comparison scales (Faces,

JDS, and Job Evaluation) was entered in Step 1 of the analysis on each outcome measure (Intent-to-Quit, OCBI, OCBO, and IRB). The complete 24-item six-facet FSS was entered in Step 2 of each analysis.

Hierarchical regression analyses – Faces (Step 1), 24-item six-facet FSS (Step 2)

In the first set of analyses, the Faces data was entered in Step 1 of the hierarchical regression, while the FSS facets were entered in Step 2. The results (see Tables 17-20) show a significant increase in R^2 across all four outcome measures after the addition of the FSS facets. Specifically, for intent-to-quit (M = 3.20, SD = 2.01), both models were shown to be significant such that F (1, 765) = 605.94, $p < .01$ and F (6, 759) = 618.71, $p < .01$ for models 1 and 2 respectively. The Faces scale was a significant predictor in Step 1, (β = -.67, t = -24.616, $p <$ .01). In Step 2, both the supervisor (β = -.19, t = -4.65, $p < .01$) and work-related (β = -.17, t = -4.30, $p < .01$) facets were significant predictors in addition to the Faces scale (β = -.66, t = -10.53, $p < .01$) (see Table 17).

For OCBI (M = 3.96, SD = .68), both models were again significant whereby F (1, 746) = 52.08, $p < .01$ and F (6, 740) = 63.61, $p < .01$ for models 1 and 2 respectively. The Faces scale was a significant predictor in Step 1 (β = .26, t = 7.22, $p < .01$. In Step 2, the Faces scale became a non-significant predictor (t = -.72, p = ns) once the FSS facets were entered into the analysis. Instead the co-workers (β = .21, t = 4.95, $p < .01$) and work-related (β = .19, t = 3.68, $p < .01$) facets significantly predicted OCBI (see Table 18).

For OCBO (M= 4.08, SD = .56), both models were once again significant and F (1, 745) = 48.64, $p < .01$ for model 1 and F (6, 739) = 62.03, $p < .01$ for model 2. The Faces scale was significant in Step 1 (β = .25, t = 6.97, $p < .01$), but was a non-significant predictor of OCBO (t = -1.39, p = ns) once the FSS facets were entered, leaving the FSS supervisor (β = .15, t = 3.45, $p <$

Table 17
Hierarchical Regression Analysis for Intent-to-Quit (Comparing Faces and FSS)

Step and variable		*B*	*SE B*	β	*t*	R^2	ΔR^2
Step 1:	Faces	-.735	.030	-.665	-24.616**	.442	.442**
Step 2:	FSS subscales added					.493	.051**
	Faces	-.465	.044	-.420	-10.531**		
	Pay	-.044	.047	-.031	-.930		
	Promotion	-.099	.051	-.067	-1.934		
	Supervisor	-.246	.053	-.152	-4.651**		
	Co-workers	.045	.061	.023	.737		
	Work-related	-.300	.070	-.172	-4.297**		
	Benefits	-.017	.045	-.012	-.371		

Note: N = 767; **p* < .05. ***p* <.01.

Table 18
Hierarchical Regression Analysis for OCBI (Comparing Faces and FSS)

Step and variable		*B*	*SE B*	β	*t*	R^2	ΔR^2
Step 1:	Faces	.096	.013	.255	7.217**	.064	.064**
Step 2:	FSS subscales added					.135	.061**
	Faces	-.014	.020	-.038	-.721		
	Pay	.012	.021	.025	.572		
	Promotion	.024	.023	.048	1.041		
	Supervisor	.018	.024	.033	.761		
	Co-workers	.134	.027	.208	4.948**		
	Work-related	.116	.031	.194	3.681**		
	Benefits	.003	.020	-.007	.879		

Note: N = 748; **p* < .05. ***p* <.01.

.01) and work-related (β = .31, *t* = 5.95, *p* < .01) facets as the only significant predictors of OCBO in Step 2 (see Table 19).

Finally for IRB (*M* = 4.30, *SD* = .62), both models were significant *F* (1, 745) = 33.16, *p* < .01 (model 1) and *F* (6, 739) = 44.84, *p* < .01 (model 2). The Faces scale was a significant predictor in Step 1 (β = .21, *t* = 5.76, *p* < .01), and remained a significant predictor in Step 2 of the hierarchical regression analysis (β = -.11, *t* = -2.04, *p* < .05). In addition to the FSS

supervisor (β = .13, $t = 2.87$, $p < .01$) and work-related (β = .31, $t = 5.76$, $p < .01$) facets were significant predictors in Step 2 of the analysis (see Table 20).

Table 19
Hierarchical Regression Analysis for OCBO (Comparing Faces and FSS)

Step and variable		*B*	*SE B*	β	*t*	R^2	ΔR^2
Step 1:	Faces	.077	.011	.248	6.974**	.061	.061**
Step 2:	FSS subscales added					.153	.092**
	Faces	-.030	.016	-.096	-1.839		
	Pay	.002	.017	.005	.104		
	Promotion	.023	.019	.057	1.244		
	Supervisor	.067	.019	.148	3.446*		
	Co-workers	.025	.022	.048	1.142		
	Work-related	.153	.026	.312	5.947**		
	Benefits	-.012	.017	-.031	-.732		

Note: $N = 747$; *$p < .05$. **$p < .01$.

Table 20
Hierarchical Regression Analysis for IRB (Comparing Faces and FSS)

Step and variable		*B*	*SE B*	β	*t*	R^2	ΔR^2
Step 1:	Faces	.071	.012	.206	5.758**	.043	.043**
Step 2:	FSS subscales added					.126	.083**
	Faces	-.037	.018	-.108	-2.035*		
	Pay	.018	.019	.041	.918		
	Promotion	-.026	.021	-.057	-1.232		
	Supervisor	.063	.022	.126	2.872*		
	Co-workers	.039	.025	.067	1.577		
	Work-related	.167	.029	.306	5.760**		
	Benefits	.003	.019	.007	.150		

Note: $N = 747$; *$p < .05$. **$p < .01$.

Hierarchical regression analyses – JDS (Step 1), 24-item six-facet FSS (Step 2)

In the second set of hierarchical regression analyses, JDS was entered in Step 1 of the regression equation, while the 24-item six-facet complete FSS was entered in Step 2. The outcome variables were once again intent-to-quit, OCBI, OCBO, and IRB (see Tables 21-24).

Table 21
Hierarchical Regression Analysis for Intent-to-Quit (Comparing JDS and FSS)

Step and variable		*B*	*SE B*	β	*t*	R^2	ΔR^2
Step 1:	JDS	-.863	.036	-.660	-24.170**	.436	.436**
Step 2:	FSS subscales added					.487	.051**
	JDS	-.566	.057	-.433	-9.963**		
	Pay	-.040	.048	-.028	-.837		
	Promotion	-.153	.052	-.103	-2.951*		
	Supervisor	-.281	.053	-.174	-5.299**		
	Co-workers	.018	.061	.009	.293		
	Work-related	-.191	.078	-.109	-2.454*		
	Benefits	.008	.046	.005	.165		

Note: $N = 759$; $*p < .05$. $**p < .01$.

Table 22
Hierarchical Regression Analysis for OCBI (Comparing JDS and FSS)

Step and variable		*B*	*SE B*	β	*t*	R^2	ΔR^2
Step 1:	JDS	.145	.015	.327	9.442**	.107	.107**
Step 2:	FSS subscales added					.149	.042**
	JDS	.060	.025	.135	2.391*		
	Pay	.001	.021	.003	.063		
	Promotion	.022	.023	.043	.951		
	Supervisor	.007	.023	.012	.285		
	Co-workers	.124	.027	.193	4.634**		
	Work-related	.057	.034	.096	1.672		
	Benefits	-.005	.020	-.011	-.260		

Note: $N = 748$; $*p < .05$. $**p < .01$.

For intent-to-quit ($M = 3.20$, $SD = 2.01$), both models were significant such that F (1, 757) = 584.17, $p < .01$, and F (6, 751) = 560.67, $p < .01$ for models 1 and 2 respectively. JDS was a significant predictor in Step I (β = -.66, t = -24.17, $p < .01$). JDS continued to be a significant predictor in Step 2 (β = -.43, t = -9.96, $p < .01$), in addition to the FSS facets of promotion (β = -.10, t = -2.95, $p < .05$), supervisor (β = -.17, t = -5.30, $p < .01$), and work-related (β = -.11, t = -2.45, $p < .05$) (see Table 21).

Table 23
Hierarchical Regression Analysis for OCBO (Comparing JDS and FSS)

Step and variable		*B*	*SE B*	β	*t*	R^2	ΔR^2
Step 1:	JDS	.120	.013	.328	9.489**	.108	.108**
Step 2:	FSS subscales added					.152	.044
	JDS	.030	.021	.082	1.461		
	Pay	-.007	.017	-.018	-.421		
	Promotion	.019	.019	.047	1.031		
	Supervisor	.056	.019	.124	2.909*		
	Co-workers	.016	.022	.031	.734		
	Work-related	.107	.028	.218	3.786**		
	Benefits	-.014	.017	-.035	-.820		

Note: $N = 747$; *$p < .05$. **$p < .01$.

Table 24
Hierarchical Regression Analysis for IRB (Comparing JDS and FSS)

Step and variable		*B*	*SE B*	β	*t*	R^2	ΔR^2
Step 1:	JDS	.122	.014	.301	8.606**	.090	.090**
Step 2:	FSS subscales added					.124	.033**
	JDS	.036	.023	.090	1.569		
	Pay	.007	.020	.016	.356		
	Promotion	-.032	.021	-.069	-1.497		
	Supervisor	.049	.022	.098	2.267*		
	Co-workers	.028	.025	.048	1.124		
	Work-related	.111	.032	.203	3.483*		
	Benefits	.001	.019	.003	.077		

Note: $N = 747$; *$p < .05$. **$p < .01$.

For OCBI ($M = 3.96$, $SD = .68$), both models were significant so that F (1, 746) = 89.16, $p < .01$ (model 1) and F (6, 740) = 95.32, $p < .01$ (model 2) (see Table 22). JDS was a significant predictor in Step 1 (β = .33, $t = 9.44$, $p < .01$) and was again a significant predictor in Step 2 (β = .14, $t = 2.39$, $p < .05$). The FSS co-worker facet was also a significant predictor of OCBI in Step 2 (β = .19, $t = 4.63$, $p < .01$).

For OCBO (M = 4.08, SD = .56), both models were once again significant whereby F (1, 745) = 90.04, $p < .01$ and F (6, 739) = 96.44, $p < .01$ for models 1 and 2 respectively. JDS was a significant predictor in Step 1 (β = .33, t = 9.49, $p < .01$), but became a non-significant predictor in Step 2 (t = 1.46, p = ns). Instead, the supervisor (β = .12, t = 2.91, $p < .05$) and work-related (β = .22, t = 3.79, $p < .01$) FSS facets were the only significant predictors in Step 2 (see Table 23).

Finally, for IRB (M = 4.30, SD = .62), both models were significant so that F (1, 745) = 74.06, $p < .01$ (model 1) and F (6, 739) = 78.71, $p < .01$ (model 2). JDS was a significant predictor in Step 1 (β = .30, t = 8.61, $p < .01$). In Step 2, JDS was not a significant predictor (t = 1.57, p = ns). Instead, the FSS facets for supervisor (β = .10, t = 2.27, $p < .05$) and work-related (β = .20, t = 3.48, $p < .01$) were the only significant predictors in Step 2 (see Table 24).

Hierarchical regression analyses – Job Evaluation (Step 1), 24-item six-facet FSS (Step 2)

The final set of hierarchical regression analyses compared the predictive ability of Job evaluation and the 24-item six-facet FSS on the outcome measures (intent-to-quit, OCBI, OCBO, and IRB). The results of these hierarchical regression analyses are reported in Tables 25-28. For intent-to-quit (M = 3.20, SD = 2.01), both regression models are significant so that F (1, 765) = 771.39, $p < .01$ for model 1 and F (6, 759) = 776.32, $p < .01$ for model 2. Job evaluation was a significant predictor of intent-to-quit in Step 1 (b = -.71, t = -27.77, $p < .01$). In Step 2, both job evaluation (b = -.57, t = -12.69, $p < .01$) and supervisor (b = -.13, t = -4.05, $p < .01$) were significant predictors of intent-to-quit (see Table 25).

For OCBI (M = 3.96, SD = .68), both models were significant whereby F (1, 746) = 66.42, $p < .01$ and F (6, 740) = 75.23, $p < .01$ for models 1 and 2 respectively (see Table 26). Job evaluation was a significant predictor of OCBI in Step 1 (b = .29, t = 8.15, $p < .01$) but was not a significant predictor in Step 2 (t = -.49, p = ns). Instead, the FSS facets of co-wokers (b = .21, t =

Table 25

Hierarchical Regression Analysis for Intent-to-Quit (comparing Job Evaluation and FSS)

Step and variable		*B*	*SE B*	β	*t*	R^2	ΔR^2
Step 1:	Job Evaluation	-1.398	.050	-.709	-27.774**	.502	.502**
Step 2:	FSS subscales added					.521	.019**
	Job Evaluation	-1.133	.089	-.574	-12.688**		
	Pay	.003	.047	.002	.060		
	Promotion	-.082	.050	-.055	-1.638		
	Supervisor	-.209	.052	-.129	-4.045**		
	Co-workers	.078	.059	.041	1.318		
	Work-related	-.101	.074	-.058	-1.377		
	Benefits	-.032	.044	-.023	-.726		

Note: $N = 767$; $*p < .05$. $**p < .01$.

Table 26

Hierarchical Regression Analysis for OCBI (Comparing Job Evaluation and FSS)

Step and variable		*B*	*SE B*	β	*t*	R^2	ΔR^2
Step 1:	Job Evaluation	.191	.023	.286	8.150**	.082	.082**
Step 2:	FSS subscales added					.143	.061**
	Job Evaluation	-.020	.041	-.030	-.490		
	Pay	.012	.021	.025	.563		
	Promotion	.023	.023	.046	1.012		
	Supervisor	.017	.024	.032	.728		
	Co-workers	.133	.027	.207	4.907**		
	Work-related	.115	.034	.193	3.365*		
	Benefits	-.003	.020	-.007	-.165		

Note: $N = 748$; $*p < .05$. $**p < .01$.

4.91, $p < .01$) and work-related ($b = .19$, $t = 3.37$, $p < .05$) were the only significant predictors of OCBI in Step 2.

For OCBO ($M = 4.08$, $SD = .56$), both models were significant so that F (1, 745) = 59.79, $p < .01$ and F (6, 739) = 71.60, $p < .01$ for models 1 and 2 respectively. Job evaluation was a significant predictor in Step 1 ($b = .27$, $t = 7.73$, $p < .01$), and continued to be a significant predictor in Step 2 ($b = -.14$, $t = -2.26$, $p < .05$). In addition, the supervisor ($b = .16$, $t = 3.59$, $p <$

.01) and work-related (b = .34, t = 6.00, p < .01) FSS facets were significant predictors of OCBO in Step 2 (see Table 27).

Table 27
Hierarchical Regression Analysis for OCBO (Comparing Job Evaluation and FSS)

Step and variable		*B*	*SE B*	β	*t*	R^2	ΔR^2
Step 1:	Job Evaluation	.150	.019	.273	7.732**	.074	.074**
Step 2:	FSS subscales added					.155	.081**
	Job Evaluation	-.076	.034	-.139	-2.259*		
	Pay	.005	.018	.014	.307		
	Promotion	.024	.019	.059	1.290		
	Supervisor	.070	.020	.155	3.585**		
	Co-workers	.028	.022	.052	1.248		
	Work-related	.168	.028	.342	6.001**		
	Benefits	-.013	.017	-.034	-.783		

Note: N = 747; *p < .05. **p <.01.

Table 28
Hierarchical Regression Analysis for IRB (Comparing Job Evaluation and FSS)

Step and variable		*B*	*SE B*	β	*t*	R^2	ΔR^2
Step 1:	Job Evaluation	.142	.022	.233	6.546**	.054	.054**
Step 2:	FSS subscales added					.127	.073**
	Job Evaluation	-.088	.038	-.144	-2.310*		
	Pay	.022	.020	.049	1.094		
	Promotion	-.026	.021	-.056	-1.204		
	Supervisor	.066	.022	.132	2.989*		
	Co-workers	.042	.025	.071	1.664		
	Work-related	.181	.031	.334	5.776**		
	Benefits	.002	.019	.004	.094		

Note: N = 747; *p < .05. **p <.01.

Finally, for IRB (M = 4.30, SD = .62), both models were significant so that F (1, 745) = 48.85, p < .01 (model 1) and F (6, 739) = 53.09, p < .01 (model 2). Job evaluation was once again a significant predictor in Step 1 (b = .23, t = 6.55, p < .01). In Step 2, job evaluation (b = -

.14, t = -2.31, p < .05) and the FSS supervisor (b = .13, t = 2.99, p < .05) and work-related (b = .33, t = 5.78, p < .01) facets were significant predictors of IRB (see Table 28).

Summary of hierarchical regression analyses between the general job satisfaction measures and complete 24-item six-facet FSS

The results of the hierarchical multiple regression analyses indicate that the 24-item six-facet FSS adds significant predictive ability over the three comparison scales (Faces, JDS, and Job evaluation) for the four outcome measures selected (intent-to-quit, organizational citizenship behaviors towards individuals and the organization, and in-role behaviors). In several cases, comparison measures actually become non-significant when the FSS facets are added into the regression analysis. Specifically, the Faces scale becomes a non-significant predictor for OCBI and OCBO once the FSS facets are added. The same happens to JDS when predicting OCBO and IRB, and to job evaluation when predicting OCBI. These results provide support for Hypothesis 3 that the complete version of the FSS would significantly predict intent-to-quit and job performance.

Shortened versus complete FSS

In addition to the comparison scales (Faces, JDS, and Job evaluation), the shortened version of the FSS (using single-item facet measures) was entered also into hierarchical regression analyses with the complete 24-item FSS. The six-item shortened FSS was entered in Step 1 of the hierarchical regression analysis (just like the comparison scales in the earlier analyses), while the complete 24-item six-facet FSS was entered in Step 2. The results of these four hierarchical multiple regressions can be found in Tables 29-32. For the comparison in predictive ability between the shortened FSS (single-item facet measure) and the complete FSS (24-items 6-facet measure) on intent-to-quit (M = 3.19, SD = 2.00), both models were found to

Table 29

Hierarchical Regression Analysis for Intent-to-Quit (Comparing Shortened and Complete FSS)

Step and variable		*B*	*SE B*	β	*t*	R^2	ΔR^2
Step 1:	Shortened FSS					.398	.398**
	PAY5	-.135	.049	-.098	-2.753**		
	PROM4	-.106	.045	-.082	-2.388*		
	SUPE7	-.371	.051	-.246	-7.299**		
	COWO7	-.082	.058	-.047	-1.420		
	WORK8	-.469	.052	-.328	-9.067**		
	BENE8	-.058	.044	-.045	-1.317		
Step 2:	Complete FSS added					.428	.030**
	PAY5	-.004	.136	-.003	-.026		
	PROM4	.099	.085	.077	1.158		
	SUPE7	-.103	.134	-.068	-.769		
	COWO7	.173	.151	.099	1.142		
	WORK8	-.091	.096	-.064	-.949		
	BENE8	-.046	.107	-.035	-.432		
	Pay	-.108	.141	-.076	-.762		
	Promotion	-.267	.107	-.181	-2.492*		
	Supervisor	-.242	.147	-.151	-1.647		
	Co-workers	-.236	.168	-.125	-1.405		
	Work-related	-.542	.125	-.312	-4.349**		
	Benefits	.031	.118	.022	.264		

Note: $N = 746$; $*p < .05$. $**p < .01$.

Table 30

Hierarchical Regression Analysis for OCBI (Comparing Shortened and Complete FSS)

Step and variable		*B*	*SE B*	β	*t*	R^2	ΔR^2
Step 1:	Shortened FSS					.146	.146**
	PAY5	.005	.020	.012	.273		
	PROM4	.035	.018	.079	1.888		
	SUPE7	.051	.021	.099	2.432*		
	COWO7	.108	.024	.183	4.533**		
	WORK8	.075	.021	.154	3.534**		
	BENE8	-.012	.018	-.027	-.666		
Step 2:	Complete FSS added					.163	.017*
	PAY5	-.020	.057	-.042	-.343		
	PROM4	.065	.036	.148	1.831		
	SUPE7	.186	.056	.361	3.327**		
	COWO7	.015	.063	.026	.239		
	WORK8	.027	.040	.055	.682		
	BENE8	-.033	.044	-.073	-.732		
	Pay	.025	.060	.052	.417		
	Promotion	-.049	.044	-.098	-1.113		
	Supervisor	-.166	.061	-.305	-2.717**		
	Co-workers	.111	.070	.173	1.579		
	Work-related	.081	.052	.137	1.565		
	Benefits	.034	.049	.072	.691		

Note: $N = 728$; $*p < .05$. $**p < .01$.

Table 31

Hierarchical Regression Analysis for OCBO (Comparing Shortened and Complete FSS)

Step and variable		*B*	*SE B*	β	*t*	R^2	ΔR^2
Step 1:	Shortened FSS					.148	.148**
	PAY5	.001	.016	.003	.079		
	PROM4	.029	.015	.080	1.913		
	SUPE7	.076	.017	.180	4.408**		
	COWO7	.011	.019	.023	.562		
	WORK8	.090	.017	.226	5.195**		
	BENE8	-.015	.015	-.041	-1.004		
Step 2:	Complete FSS added					.166	.018*
	PAY5	050	.047	.130	1.063		
	PROM4	.066	.029	.183	2.265*		
	SUPE7	.101	.046	.239	2.208*		
	COWO7	-.087	.052	-.180	-1.678		
	WORK8	.016	.032	.041	.499		
	BENE8	-.020	.036	-.055	-.556		
	Pay	-.056	.049	-.141	-1.137		
	Promotion	-.061	.036	-.147	-1.664		
	Supervisor	-.036	.050	-.080	-.716		
	Co-workers	.106	.058	.201	1.839		
	Work-related	.116	.043	.238	2.721**		
	Benefits	.016	.040	.042	.403		

Note: $N = 727$; $*p < .05$. $**p < .01$.

Table 32

Hierarchical Regression Analysis for IRB (Comparing Shortened and Complete FSS)

Step and variable		*B*	*SE B*	β	*t*	R^2	ΔR^2
Step 1:	Shortened FSS					.120	.120**
	PAY5	.011	.018	.026	.595		
	PROM4	.001	.017	.003	.079		
	SUPE7	.068	.019	.148	3.558**		
	COWO7	.038	.021	.073	1.782		
	WORK8	.085	.019	.196	4.429**		
	BENE8	-.005	.016	-.013	-.307		
Step 2:	Complete FSS added					.143	.024**
	PAY5	-.008	.052	-.018	-.149		
	PROM4	.081	.032	.208	2.547*		
	SUPE7	.085	.050	.187	1.699		
	COWO7	-.011	.057	-.021	-.194		
	WORK8	-.007	.036	-.016	-.198		
	BENE8	.016	.040	.040	.399		
	Pay	.022	.054	.050	.402		
	Promotion	-.122	.040	-.273	-3.048**		
	Supervisor	-.023	.055	-.047	-.417		
	Co-workers	.046	.063	.081	.736		
	Work-related	.145	.047	.275	3.116**		
	Benefits	-.010	.044	-.024	-.225		

Note: $N = 728$; *$p < .05$. **$p < .01$.

be significant so that F (6, 739) = 81.43, $p < .01$ (model 1) and F (6, 733) 87.80, $p < .01$ (model 2). In Step 1, the single-item FSS facets of pay (β = -.10, t = -2.75, $p < .01$), promotion (β = -.08, t = -2.39, $p < .05$), supervisor (b = -.25, t = -7.30, $p < .01$), and work (β = -.33, t = -9.07, $p < .01$) were all significant predictors of intent-to-quit. When the complete 24-item six-facet FSS was entered into the regression analysis in Step 2, none of the single-item FSS facets were significant predictors of intent-to-quit (see Table 29). Instead, only the complete FSS multi-item facets for promotion (β = -.18, t = -2.49, $p < .05$) and work-related (β = -.31, t = -4.35, $p < .01$) were significant predictors of intent-to-quit.

For OCBI (M = 3.96, SD = .68), both models were once again significant so that F (6, 721) = 20.48, $p < .01$ for model 1 and F (6, 715) = 22.90, $p < .05$ for model 2. In Step 1, the supervisor (β = .10, t = 2.43, $p < .05$), co-worker (β = .18, t = 4.53, $p < .01$), and work (β = .154, t = 3.53, $p < .01$) items significantly predicted OCBI. Once the complete FSS was entered into the regression analysis in Step 2, of these three items only the supervisor item (β = .36, t = 3.33, $p < .01$) remained a significant predictor (see Table 30). In addition, the four-item supervisor scale from the complete FSS was also a significant predictor of OCBI in Step 2 (β = -.31, t = -2.72, $p < .01$).

For OCBO (M = 4.08, SD = .56), both models were significant whereby F (6, 720) = 20.85, $p < .01$ and F (6, 714) = 23.39, $p < .05$ for models 1 and 2 respectively. In Step 1, the supervisor (β = .18, t = 4.41, $p < .01$) and work (β = .23, t = 5.20, $p < .01$) items were significant predictors of OCBO. In Step 2, the single-item work item became a non-significant predictor (t = .50, p = ns). The single-item supervisor (β = .24, t = 2.21, $p < .05$) and promotion (β = .18, t = 2.27, $p < .05$) items were significant predictors in Step 2, along with the 4-item work-related FSS facet (β = .24, t = 2.72, $p < .01$) (see Table 31).

Finally, for IRB (M = 4.31, SD = .61), both models were again significant so that F (6, 721) = 16.34, $p < .01$ for model 1 and F (6, 715) = 19.62, $p < .01$ for model 2. Two single-item measures were significant predictors of IRB in Step 1. These were the supervisor (β = .15, t = 3.56, $p < .01$) and the work (β = .20, t = 4.43, $p < .01$) items. When the complete (24-item 6 facet) FSS was entered in Step 2, the single-item promotion item (β = .21, t = 2.55, $p < .05$), and the 4-item promotion (β = -.27, t = 3.05, $p < .01$) and work-related (β =.28, t = 3.12, $p < .01$) subscales were significant predictors of IRB (see Table 32).

These results indicate that the complete 24-item six-facet FSS was a significant predictor of the four outcomes (intent-to-quit, OCBI, OCBO, and IRB) above and beyond the single-item shortened FSS, which is not surprising considering that all six-item of the single-item shortened FSS were contained within the complete 24-item FSS measure. What is of interest is the increase in R^2 demonstrated when using the complete as opposed to the shortened version of the FSS, which was .030, .017, .018, and .024 for intent-to-quit, OCBI, OCBO, and IRB respectively. If we look at these numbers from a different perspective, we can say that the predictive losses of going from a 24-item scale to a six-item scale is no more than 3% of total variance for these four outcomes. Taken together, these results provide support to Hypothesis 3 stating that both the complete (24-item) and shortened (six-item) versions of the FSS will also demonstrate evidence of predictive ability.

CHAPTER 4

DISCUSSION

In general, the results of this study showed support for the research hypothesis. However, several concerns should be addressed at this point in the study. These include (1) the final decision to create a 24-item six-facet FSS instead of the 32-item eight-facet scale originally conceived, (2) uses of the six-item shortened version of the FSS, (3) facets scales as incomplete measures of job satisfaction, and (4) the limitations of this study and next steps in scale development.

Creation of the 24-item Six-facet FSS

The FSS was originally conceived as a scale measuring eight facets of job satisfaction, namely, pay, promotion, supervisor, co-workers, work, benefits, procedures, and physical working conditions. Sixty four items were initially created to measure these eight facets (i.e. eight items per facet) in order to allow the items with poor psychometric properties to be discarded. During the initial analysis of the FSS item however, two possible models for the FSS (an eight-factor and a six-factor model) were discovered. Further analysis using confirmatory factor analysis methodology showed that the final complete version of the FSS best fit a six-factor model based on the six different model fit indices provided by R (v. 2.4.1). Specifically, while both models showed good fit according to the six fit indices used in this study, the six-factor model (i.e. the final version of the FSS measuring six facets) consistently outperformed the eight-factor model across all six fit indices.

This was surprising considering that the FSS was initially conceived as an eight-facet scale. A review of the initial pool of FSS items, however, showed that a six-facet scale was not only more psychometrically sound, it also best represented the items as they were worded,

considering that the work, procedures, and physical working conditions items all tapped into a work-related factor. While the internal consistency reliability index of the work-related facet seems slightly lower than that of the other facets, this is to be expected considering that this facet is an amalgamation of what was initially conceived as items from three different facets. Nevertheless, the Cronbach's α value of .89 for the work-related scale still approaches the range described as excellent internal consistency by Charter (2003). In addition, the internal consistency reliability scores for the other five facet subscales ranged from .92 to .95, which were even higher than initial scale development reliability scores reported for other job satisfaction facet scales such as the Job Descriptive Index (Smith, Kendall, & Hulin, 1969). These reasons, coupled with the clear lack of cross-loadings in the factor analysis matrix and the high intercorrelations (see Table 10) between the work, procedures, and physical working conditions subscales[4] prompted the final decision to create a six-facet complete version of the FSS that was not only more psychometrically sound but also more parsimonious as well. This complete version of the FSS consisted of 24-items (four items per facet) measuring the following six facets – pay, promotion, supervisor, coworkers, work-related, and benefits.

The Six-item Shortened FSS

A shortened version of the FSS was also created in order to take advantage of the significant savings provided by using shorter scales (see for a review, Nagy, 2002). The shortened version of the FSS was conceived as a scale using one item to measure each of the six facets derived earlier – essentially creating a six-item scale that would measure as many facets of job satisfaction as the full version of the FSS. However, due to the arguments against the use of single-item measures (see for example, Loo & Kells, 1998), additional reliability measures were conducted to determine if the shortened FSS would exhibit sound psychometric properties.

The four methods discussed by proponents of using single-item measures of job satisfaction (see for examples, Wanous & Hudy, 2001; Nagy, 2002) provided a varied range of the reliability of the shortened FSS (see Table 16). The results of the single-item reliability estimates showed that the items easily surpassed the minimum acceptable single-item reliability cut-off point of .70 reported by Nagy (2002). Indeed, the average single-item reliability score reported in this study ranged from .85 to .95, which rebuffs the argument that measures of single-item reliability will be necessarily low (see for example Loo, 2002). Instead, the estimate based on factor analysis communalities (which provide the lower bound for the reliability of the shortened FSS) ranged from .76 for the promotion and work-related items to .92 for the item assessing pay, therefore ensuring that the reliability for this scale ranged from fair to excellent based on the standards established by Charter (2003).

More interesting is the comparisons done between the predictive ability of the shortened and the complete versions of the FSS (see Tables 29 – 32). This analysis was conducted using four outcome measures (intent-to-quit, organization citizenship behaviors towards individuals and the organization, and in-role behaviors) that have been previously shown to be related to job satisfaction (see for examples, Judge, et al., 2001; Wagner & Rush, 2000; Campbell & Campbell, 2003). The results of the hierarchical multiple regressions showed that using the 24-item complete version of the FSS significantly increased R^2 between the ranges of .017 to .030 (depending on the outcome measure analyzed) over the six-item shortened FSS.

While significant statistically, this increase really only corresponds to an increase of between 1.7 to 3 percent of total variance, but was done by quadrupling the total number of items used as predictors. Considering the cost-benefit ratio described, the use of the shortened FSS may well be a reasonable alternative to the complete scale when a researcher would rather

generate savings in terms of time, cost, and space, and increase the parsimony and face validity of the study as opposed to maximizing the amount of variance accounted for by the measurement scale.

Facets as an Incomplete Measure of Job Satisfaction

The FSS was conceived as a facet measure of job satisfaction, and thus it measures a finite number (in this case six) of facets from a complex construct. Furthermore, the scale was originally conceived to measure eight facets, indicating difficulties with the items originally designed to measure the various facets. As a result, critics for the use of facet measures may well note the limitation of this scale, indicating that it does not adequately assess the entire construct (for a review of this argument, see Scarpello & Campbell, 1983).

However, comparisons between the FSS and a well-accepted measure of global job satisfaction (the Faces scale) seem to indicate that the FSS is an accurate predictor of outcomes beyond the Faces scale. Using the FSS significantly increased the predictive ability of the four hierarchical multiple regression analyses of the outcome measures (intent-to-quit, OCBI, OCBO, and IRB). While the actual increase in total variance only ranged from 5.1 to 9.2%, in two of these analyses (for OCBI and OCBO), entering the FSS into the analysis actually made the Faces scale a non-significant predictor (see Tables 18 and 19). Nevertheless, the point made by proponents of global measures of job satisfaction stating that facet measures are incomplete must be noted and further analysis of the FSS should be undertaken in order to enhance the scale's ability to measure job satisfaction.

Limitations and Next Steps

While the results of this study showed support for the research hypotheses, one major issue should be discussed, specifically the amalgamation of the three original FSS subscales

(work, procedures, and physical working conditions) into a single work-related subscale. While summing these subscales does lead to a more psychometrically sound measure, a review of the items was conducted to determine if the items that cross-loaded clustered around an alternate factor heading that was not initially envisaged. It was discovered that two of the items that cross-loaded onto an eighth factor heading (PROC4 and PWC1) may have done so by tapping into a "work enabler-inhibitor" factor. This factor was not among the original eight factors assessed during the creation of the FSS, and may indeed be another important facet that should be assessed when measuring job satisfaction.

The discovery of another potentially significant facet is another sign that facet measures of job satisfaction in general (and the FSS in particular) have an inherent weakness in that they cannot measure the entire job satisfaction construct. However, actually measuring the entire job satisfaction construct may not be necessary in order to be a significant measure of the construct or to be a predictor of its outcomes, as was shown in the hierarchical regression analyses against the Faces scale. Nonetheless, this leads to a next step in the refinement of the FSS, in that additional facets should be added to the scale to determine if they add value when measuring job satisfaction or predicting its outcomes beyond that provided by the current set of facets. Beyond simply adding potentially significant facets, validity studies should also be conducted on the existing FSS as part of the next step in scale creation, and additional reliability evidence can be gathered (especially for the shortened version of the FSS) using test-retest methodology.

Conclusion

This study was initially conceived to create a new measure of job satisfaction that was based on contemporary definitions of the construct. A semantic differential scale with evaluative end-points was used as the basis for the construction of the response scale. Since job satisfaction

has often been described as a multi-faceted construct, a multi-factorial scale – the Facet Satisfaction Scale (FSS) – was envisioned in which the scale items were created based on the facets that were popularly in existing measures of the construct. In addition, recent findings indicating the potential use of single-item facet scales were incorporated in this study, and a shortened version of the FSS was also created for psychometric testing.

Analysis of the initial scale construction data showed that the full version of the FSS exhibited adequate factor structure and good internal consistency reliability across each of its factors. The full FSS was also a significant predictor of various organizational outcomes relevant to job satisfaction above and beyond the three measures used as comparators. The shortened version of the FSS also exhibited adequate reliability, based on various estimates of single-item reliability, and successfully predicted the same organizational outcomes. However, the work-related facet of the FSS exhibited slightly lower reliability than the other five facets. Future studies should be conducted to analyze this issue in order to ensure that both the full and shortened versions of the FSS are psychometrically sound. Additional facets should be tested to determine if they add significantly to the existing scale. Validity studies should also be conducted as the next step in the scale creation process.

ENDNOTES

[1] Facet descriptions are defined as "affect-free perceptions about the experiences associated with individual job facets" (Rice et al., 1991, p. 31).

[2] Some single-item global measures of job satisfaction have also been shown to have high reliability and validity (see for example Kunin, 1955 for a review of the reliability and validity the Faces Scale, a single-item global measure of job satisfaction).

[3] The single-item-multi-item correlation estimate for the work-related item was based on the correlation between the FSS WORK8 item and the 24-item 6-facet FSS work-related subscale.

[4] The high level of intercorrelations between the work, procedures, and physical working conditions facets indicated that these facets probably measured the same construct, and were thus redundant (see for a brief review, Bollen & Lennox, 1991).

REFERENCES

Acito, F. & Anderson, R. D. (1980). A Monte Carlo comparison of factor analytic models. *Journal of Marketing Research, 17*(2), 228-236.

Ajzen, I. (2001). Nature and operation of attitudes. *Annual Review of Psychology, 52,* 27-58.

Arvey, R. D., Bouchard, T. J., Segal, N. L., & Abraham, L. M. (1989). Job satisfaction: Environmental and genetic components. *Journal of Applied Psychology, 74*(2), 187-192.

Bateman, T. S. & Organ, D. W. (1983). Job satisfaction and the good soldier: The relationship between affect and employee 'citizenship'. *Academy of Management Journal, 26*(4), 587-595.

Beauducel, A. & Wittmann, W. W. (2005). Simulation study on fit indexes in CFA based on data with slightly distorted simple structure. *Structural Equation Modeling, 12*(1), 41-75.

Bollen, K. & Lennox, R. (1991). Conventional wisdom on measurement: A structural equation perspective. *Psychological Bulletin, 110*(2), 305-314.

Boswell, W. R., Boudreau, J. W., & Tichy, J. (2005). The relationship between employee job change and job satisfaction: The honeymoon-hangover effect. *Journal of Applied Psychology, 90*(5), 882-892.

Brief, A. P. (1998). *Attitudes in and around organizations.* Thousand Oaks, CA: Sage Publications.

Brief, A. P. & Roberson, L. (1989). Job attitude organization: An exploratory study. *Journal of Applied Social Psychology, 19*(9), 717-727.

Brief, A. P. & Weiss, H. M. (2002). Organizational behavior: Affect in the workplace. *Annual Review of Psychology, 53*(1), 279-307.

Bruck, C. S., Allen, T. D., & Spector, P. E. (2002). The relation between work-family conflict and job satisfaction: A finer-grained analysis. *Journal of Vocational Behavior, 60*(3), 336-353.

Buckley, M. R., Carraher, S. M., & Cote, J. A. (1992). Measurement issues concerning the use of inventories of job satisfaction. *Educational and Psychological Measurement, 52*(3), 529-543.

Cammann, C., Fichman, M., Jenkins, D., & Klesh, J. (1983). Assessing the attitudes and perceptions of organizational members. In S. Seashore, E. Lawler, P. Mirvis, & C. Cammann (Eds.), *Assessing organizational change: A guide to methods, measures and practices* (pp. 71-138). New York: John Wiley.

Campbell, D. J. & Campbell, K. M. (2003). Global versus facet predictors of intention to quit: Differences in a sample of male and female Singaporean managers and non-managers. *International Journal of Human Resource Management, 14*(7), 1152-1177.

Charter, R. A. (2003). A breakdown of reliability coefficients by test type and reliability method, and the clinical implications of low reliability. *Journal of General Psychology, 130*(3), 290-304.

Connolly, J. J. & Viswesvaran, C. (2000). The role of affectivity in job satisfaction: A meta-analysis. *Personality and Individual Differences, 29*(2), 265-281.

Cranny, C. J., Smith, C. P., & Stone, E. F. (1992). *Job satisfaction: How people feel about their jobs and how it affects their performance.* New York: Lexington Books.

Crites, S. L., Fabrigar, L. R., & Petty, R. E. (1994). Measuring the affective and cognitive properties of attitudes: Conceptual and methodological issues. *Personality and Social Psychology Bulletin, 20*(6), 619-634.

Dipboye, R. L., Smith, C. S., & Howell, W. C. (1994). *Understanding industrial and organizational psychology: An integrated approach.* Orlando, FL: Harcourt Brace & Co.

Dunham, R. B. & Smith, F. J. (1979). *Organizational surveys: An internal assessment of organizational health.* Glenview, IL: Scott, Foresman and Company.

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods, 4*(3), 272-299.

Fazio, R. H., Powell, M. C., & Williams, C. J. (1989). The role of attitude accessibility in the attitude to behavior process. *Journal of Consumer Research, 16*(3), 280-288.

Fields, D. L. (2002). *Taking the measure of work: A guide to validated scales for organizational research and diagnosis.* Thousand Oaks, CA: Sage Publications.

Fisher, C. D. (2000). Mood and emotions while working: missing pieces of job satisfaction? *Journal of Organizational Behavior, 21,* 185-202.

Franzoi, S. L. (2003). *Social psychology.* New York: McGraw-Hill.

Freund, A. (2005). Commitment and job satisfaction as predictors of turnover intentions among welfare workers. *Administration in Social Work, 29*(2), 5-21.

Gerhart, B. (1987). How important are dispositional factors as determinants of job satisfaction? Implications for job design and other personnel programs. *Journal of Applied Psychology, 72*(3), 366-373.

Gerhard, B. (2005). The (affective) dispositional approach to job satisfaction: sorting out the policy implications. *Journal of Organizational Behavior, 26,* 79-97.

Gorsuch, R. L. & McFarland, S. G. (1972). Single vs. multiple-item scales for measuring religious values. *Journal for the Scientific Study of Religion, 11*(1), 53-64.

Griffeth, R. W., Hom, P. W., & Gaertner, S. (2000). A meta-analysis of antecedents and correlates of employee turnover: Update, moderator tests, and research implications for the next millennium. *Journal of Management, 26*(3), 463-488.

Hackman, J. R. & Oldham, G. R. (1974). *The Job Diagnostic Survey: An instrument for the diagnosis of jobs and the evaluation of job redesign projects* (Tech. Re. No. 4). New Haven, CT: Yale University, Department of Administrative Sciences.

Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work. *Organizational Behavior and Human Design Processes, 16*(2), 250-279.

Hamner, W. C. & Organ, D. W. (1978). *Organizational behavior: An applied psychological approach.* Plano, TX: Business Publications, Inc.

Harman, H. H. (1967). *Modern factor analysis.* Chicago, IL: The University of Chicago Press.

Hatfield, J., Robinson, R. B., & Huseman, R. C. (1985). An empirical evaluation of a test for assessing job satisfaction. *Psychological Reports, 56,* 39-45.

Herzberg, F. Mausner, B. Peterson, R. O., & Capwell, D. F. (1957). *Job attitudes: A review of research and opinions.* Pittsburgh, PA: Psychological Services of Pittsburgh.

Howard, J. L. & Frink, D. D. (1996). The effects of organizational restructure on employee satisfaction. *Group and Organizational Management, 21*(3), 278-303.

Huff, J. W. (2000). *Application of attitude strength to job satisfaction: The moderating role of attitude strength in the prediction of organizational outcomes from job satisfaction.* Unpublished doctoral dissertation, Northern Illinois University, DeKalb.

Huff, J. W., Tekell, J., & Yeoh, T. (2005, April). *Measuring job satisfaction: Are all measures created equal?* Poster presented at the annual conference of the Society for Industrial and Organizational Psychology, Los Angeles, CA.

Hulin, C. L. & Judge, T. A. (2003). Job attitudes. In W. C. Borman, R. Klimonski, and D. Ilgen (Eds.), *Handbook of psychology: Industrial and organizational psychology* (Vol. 12, pp. 255-276). New York: John Wiley & Sons, Inc.

Iaffaldano, M. T. & Muchinsky, P. M. (1985). Job satisfaction and job performance: A meta-analysis. *Psychological Bulletin, 97*(2), 251-273.

Ironson, G. H., Smith, P. C., Brannick, M. T., Gibson, W. M., & Paul, K. P. (1989). Constitution of a Job in General Scale: A comparison of global, composite, and specific measures. *Journal of Applied Psychology, 74*, 193-200.

Jackson, C. J. & Corr, P. J. (2002). Global job satisfaction and facet description: The moderating role of facet importance. *European Journal of Psychological Assessment, 18*(1), 1-8.

Jackson, C. J., Potter, A., & Dale, S. (1998). Utility of facet descriptions in the prediction of global job satisfaction. *European Journal of Psychological Assessment, 14*(2), 134-140.

Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin, 127*(3), 376-407.

Killgore, W. D. S. (1999). Empirically derived factor indices for the Beck Depression Inventory. *Psychological Reports, 84*(3), 1005-1013.

Kline, R. B. (2005). *Principles and practice of structural equation modeling.* New York, NY: The Guilford Press.

Kuieck, T. J. (1980). *A comparison of three operational definitions of job satisfaction.* Unpublished doctoral dissertation, Western Michigan University, Kalamazoo.

Kunin, T. (1955). The construction of a new type of attitude measure. *Personnel Psychology, 8,* 65-77.

Lambert, E. G., Edwards, C., Camp, S. D., & Saylor, W. G. (2005). Here today, gone tomorrow, back again the next day: Antecedents of correctional absenteeism. *Journal of Criminal Justice, 33,* 165-175.

LaPiere, R. T. (1934). Attitudes vs. actions. *Social Forces, 13*(2), 230-237.

Lau, D. C. & Murnighan, J. K. (2005). Interactions within groups and subgroups: The effects of demographic faultlines. *Academy of Management Journal, 48*(4), 645-659.

Law, K. S. & Wong, C. (1999). Multidimensional constructs in structural equation analysis: An illustration using the job perception and job satisfaction constructs. *Journal of Management, 25*(2), 143-160.

Lawler, E. E. III (1983). Satisfaction and behavior. In R. M. Steers & L. W. Porter (Eds.), *Motivation and work behavior* (3rd ed.). New York: McGraw-Hill.

Lee, T. W., Mitchell, T. R., Holtom, B. C., McDaniel, L. S., & Hill, J. W. (1999). The unfolding model of voluntary turnover: A replication and extension. *Academy of Management Journal, 42*(4), 450-462.

Leung, S. O. & Sachs, J. (2005). Bhargava and Ishizuka's BI-Method: A neglected method for variable selection. *Journal for Experimental Education, 73*(4), 353-367

Locke, E. A. (1969). What is job satisfaction? *Organizational Behavior and Human Performance, 4,* 309-336.

Locke, E. A. (1976). The nature and causes of job satisfaction. In M. D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 1297-1343). Chicago: Rand McNally.

Loo, R. (2002). A caveat on using single-item versus multiple-item scales. *Journal of Managerial Psychology, 17*(1), 68-75.

Loo, R. & Kells, P. (1998). A caveat on using single-item measures. *Employee Assistance Quareterly, 14*(2), 75-80.

McElwain, A. K., Korabik, K., & Rosin, H. M. (2005). An examination of gender differences in work-family conflict. *Canadian Journal of Behavioral Science, 37*(4), 283-298.

Mesmer-Magnus, J. R. & Viswesvaran, C. (2005). Convergence between measures of work-to-family and family-to-work conflict: A meta-analytic examination. *Journal of Vocational Behavior, 67,* 215-232.

Meyer, J. P., Allen, N. J., & Smith, C. A. (1993). Commitment to organizations and occupations: Extension and test of a three-component conceptualization. *Journal of Applied Psychology, 78,* 538-551.

Miles, E. W., Patrick, S. L., & King, W. C. Jr. (1996). Job level as a systemic variable in predicting the relationship between supervisory communication and job satisfaction. *Journal of Occupational and Organizational Psychology, 69,* 277-292.

Millar, M. G. & Tesser, A. (1986). Effects of affective and cognitive focus on the attitude-behavior relation. *Journal of Personality and Social Psychology, 51*(2), 270-276.

Moorman, R. H. (1993). The influence of cognitive and affective based job satisfaction measures on the relationship between satisfaction and organizational citizenship behavior. *Human Relations, 46*(6), 759-776.

Motowidlo, S. J. (1996). Orientation toward the job and organization. In K. R. Murphy (Ed.), *Individual differences and behavior in organizations,* (pp. 175-208). San Francisco: Jossey-Bass.

Nagy, M. S. (2002). Using a single-item approach to measure facet job satisfaction. *Journal of Occupational and Organizational Psychology, 75,* 77-86.

Nunnally, J. C. & Bernstein, I. H. (1994). *Psychometric theory.* New York: McGraw-Hill.

Organ, D. W. & Hamner, W. C. (1982). *Organizational behavior: An applied psychological approach.* Plano, TX: Business Publications, Inc.

Organ, D. W. & Near, J. P. (1985). Cognition vs affect in measures of job satisfaction. *International Journal of Psychology, 20,* 241-253.

Penney, L. M. & Spector, P. E. (2005). Job stress, incivility, and counterproductive work behavior (CWB): The moderating role of negative affectivity. *Journal of Organizational Behavior, 26,* 777-796.

Porter, L. W. & Steers, R. M. (1973). Organizational, work, and personal factors in employee turnover and absenteeism. *Psychological Bulletin, 80*(2), 151-176.

Rice, R. W., Gentile, D. A., & McFarlin, D. B. (1991). Facet importance and job satisfaction. *Journal of Applied Psychology, 76*(1), 31-39.

Roethlisberger, F. J. & Dickson, W. J. (1939). *Management and the worker.* Oxford, England: Harvard University Press.

Russell, S. S., Spitzmuller, C., Lin, L. F., Stanton, J. M., Smith, P. C., & Ironson, G. H. (2004). Shorter can also be better: The abridged Job In General scale. *Educational and Psychological Measurement, 64*(5), 878-893.

Saari, L. M., & Judge, T. A. (2004). Employee attitudes and job satisfaction. *Human Resources Management, 43*(4), 395-407.

Sackett, P. R. & Larson, J. R. Jr. (1990). Research strategies and tactics in industrial and organizational psychology. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology,* (Vol. 1, pp. 419-489). Palo Alto, CA: Consulting Psychologist Press, Inc.

Sagie, A. (1998). Employee absenteeism, organizational commitment, and job satisfaction: Another look. *Journal of Vocational Behavior, 52*(2), 156-171.

Salancik, G. R., & Pfeffer, J. (1978). A social information processing approach to job attitudes and task design. *Administrative Science Quarterly, 23*(2), 224-253.

Scarpello, V. & Campbell, J. P. (1983). Job satisfaction: Are all the parts there? *Personnel Psychology, 36*(3), 577-600.

Shaeffer, E. M., Krosnick, J. A., Langer, G. E., & Merkle, D. M. (2005). Comparing the quality of data obtained by minimally balanced and fully balanced attitude questions. *Public Opinion Quarterly, 69*(3), 417-428.

Siu, O., Spector, P. E., Cooper, C. L., & Lu, C. (2005). Work stress, self-efficacy, Chinese work values, and work well-being in Hong Kong and Beijing. *International Journal of Stress Management, 12*(3), 274-288.

Smith, P. C., Kendall L. M., & Hulin, C. L. (1969). *The measurement of satisfaction in work and retirement: A strategy for the study of attitudes.* Oxford, England: Rand McNally.

Spector, P. E. (1985). Measurement of human service staff satisfaction: Development of the Job Satisfaction Survey. *American Journal of Community Psychology, 13,* 693-713.

Spector, P. E. (1997). *Job satisfaction: Application, assessment, causes, and consequences*. Thousand Oaks, CA: Sage Publications.

Spector, P. E. (2000). *Industrial and organizational psychology: Research and practice.* New York, NY: John Wiley & Sons.

Staw, B. M., & Cohen-Charash, Y. (2005). The dispositional approach to job satisfaction: More than a mirage, but not yet an oasis. *Journal of Organizational Behavior, 26,* 59-78.

Staw, B. M., & Ross, J. (1985). Stability in the midst of change: A dispositional approach to job attitudes. *Journal of Applied Psychology, 70*(3), 469-480.

Steel, R. P. & Rentsch, J. R. (1997). The dispositional model of job attitudes revisited: Findings of a 10-year study. *Journal of Applied Psychology, 82*(6), 873-879.

Steers, R. M., & Rhodes, S. (1978). Major influences on employee attendance: A process model. *Journal of Applied Psychology, 63,* 391-407.

Tabachnik, B. G. & Fidell, L. S. (2001). *Using multivariate statistics.* Needlam Heights, MA: Allyn & Bacon.

Thoreson, C. J., Kaplan,S. A., Barskey, A. P., Warren,C. R., & Chermont, K (2003). The Affective Underpinnings of Job Perceptions and Attitudes: A Meta-analytic Review and Integration. *Psychological Bulletin*, *129*, 914 – 945.

Thurstone, L. L. (1928). Attitudes can be measured. *American Journal of Sociology, 33,* 529-554.

Wagner, S. L. & Rush, M. C. (2000). Altruistic organizational citizenship behavior: Context, disposition, and age. *Journal of Social Psychology, 140*(3), 379-391.

Wanous, J. P. & Hudy, M. J. (2001). Single-item reliability: A replication and extension. *Organizational Research Methods, 4*(4), 361-375.

Wanous, J. P. Reichers, A. E., & Hudy, M. J. (1997). Overall job satisfaction: How good are single-item measures? *Journal of Applied Psychology, 82*(2), 247-252.

Watson, D. & Tellegen A. (1985). Toward a consensual structure of mood. *Psychological Bulletin, 98*(2), 219-235.

Weiss, D. J. (1976). Multivariate procedures. In M. D. Dunnette (Ed.), *Handbook of industrial and organizational psychology,* (pp. 327-362). Chicago: Rand McNally College.

Weiss, D. J., Dawis, R., England, G., & Lofquist, L. (1967). *Manual for the Minnesota Satisfaction Questionnaire (Minnesota studies on vocational behavior, Vol. 22).* Minneapolis: University of Minnesota, Industrial Relations Center.

Weiss, H. M. (2002). Deconstructing job satisfaction: Separating evaluations, beliefs, and affective experiences. *Human Resource Management Review*, *12*, 173 - 194.

Weiss, H. M., Nicholas, J. P., & Daus, C. S. (1999). An examination of the joint effects of affective experiences and job beliefs on job satisfaction and variations in affective experiences over time. *Organizational Behavior and Human Decision Processes, 78*(1), 1-24.

Williams, L. J. & Anderson, S. E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of Management, 17*(3), 601-617.

Witt, L. A. & Nye, L. G. (1992). Gender and the relationship between perceived fairness of pay or promotion and job satisfaction. *Journal of Applied Psychology, 77*(6), 910-917.

Wright, T. A. & Bonnett, D. G. (1992). The effect of turnover on work satisfaction and mental health: Support for a situational perspective. *Journal of Organizational Behavior, 13*(6), 603-615.

Yu, J. H., Albaum, G., & Swenson, M. (2003). Is a central tendency error inherent in the use of semantic differential scales in different cultures? *International Journal of Market Research, 45,* 213-228.